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DETROIT MEDICAL JOURNAL

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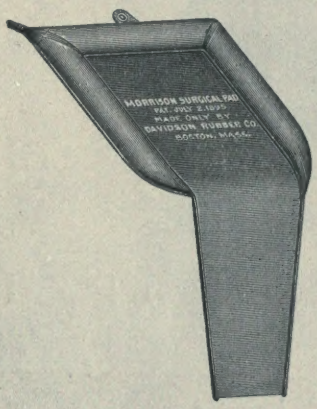

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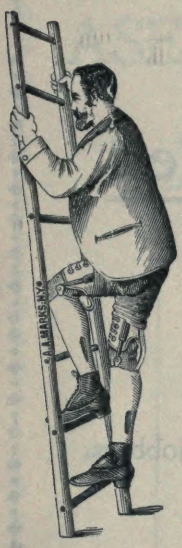

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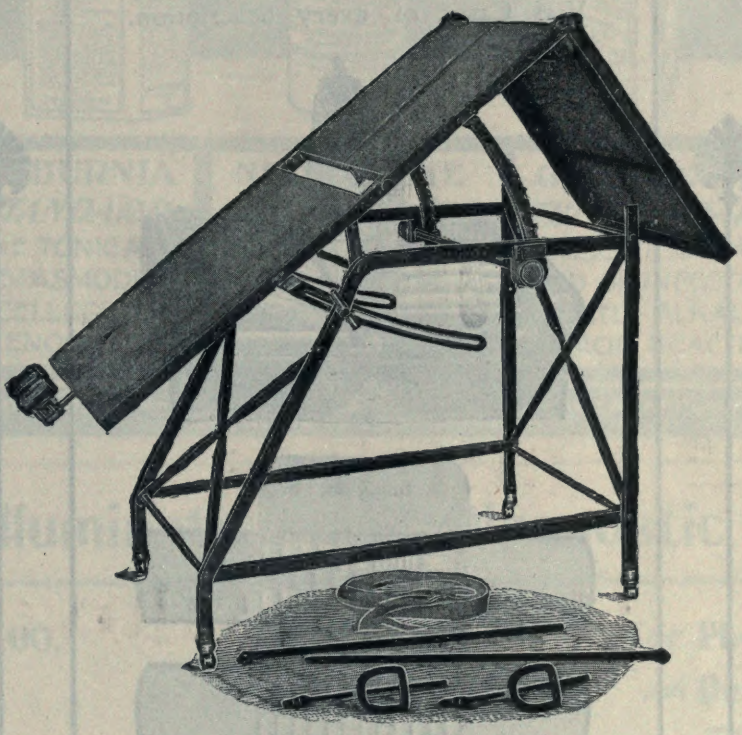

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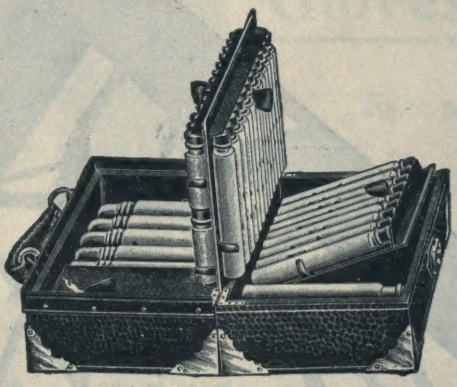

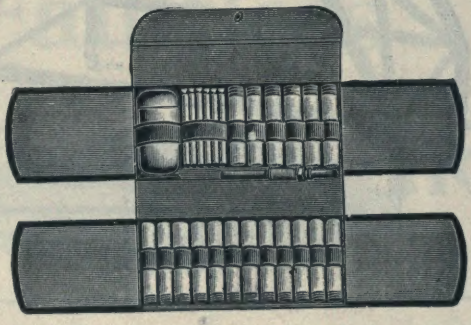

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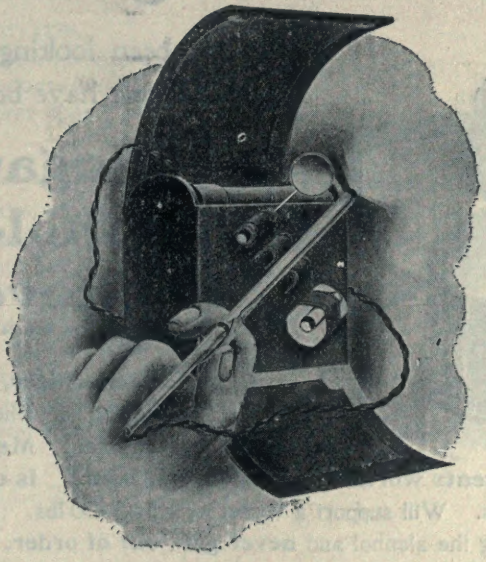

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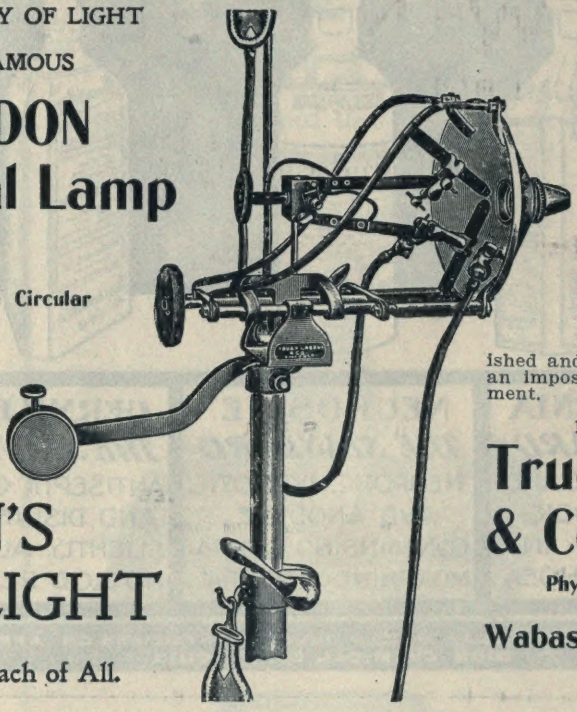

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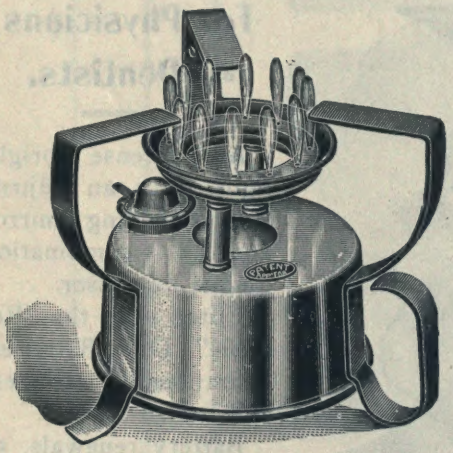

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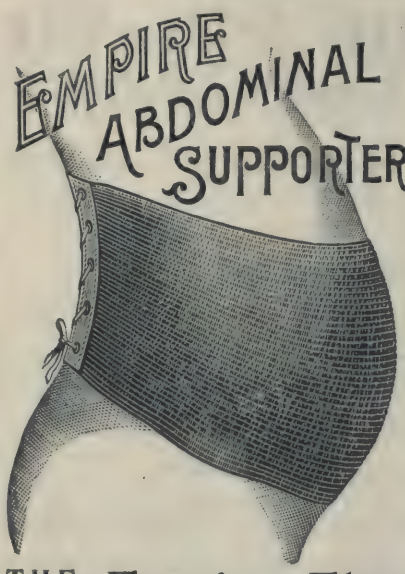

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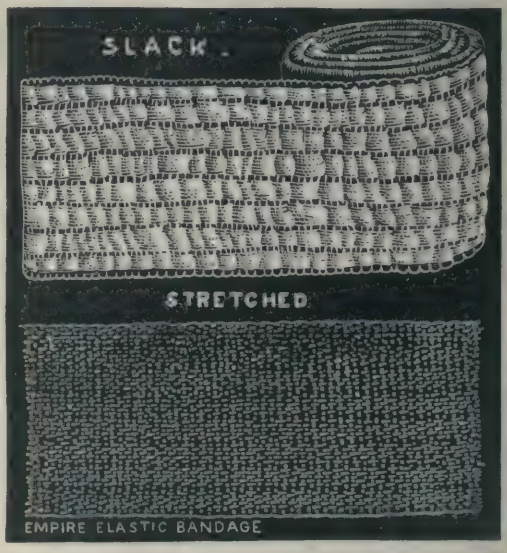

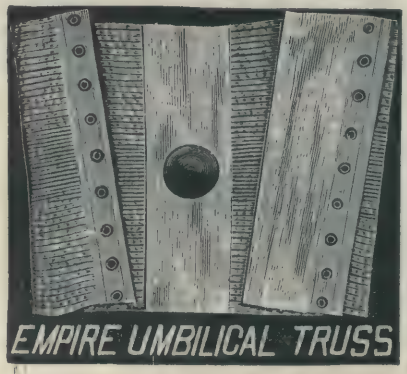

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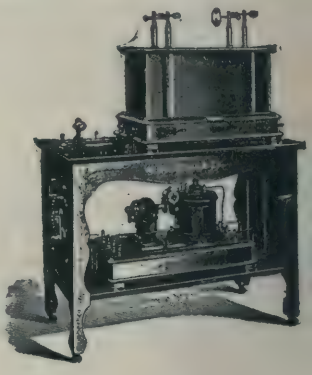

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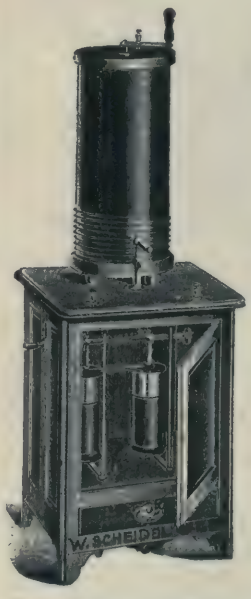

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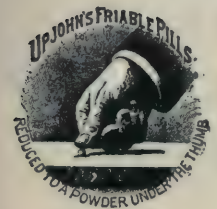

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THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE*

By MAX BALLIN, M. D.,
Detroit, Mich.

The vital statistics of the State of Michigan for the year 1899 show twenty-four cases of death due to exophthalmic goitre, or one death in every 100,000 inhabitants. I was not able to find any figures as to the frequency of the sickness, but it can be said that exophthalmic goitre is by no means a frequent disease; moreover, many patients with this affliction die from complicating pulmonary and cardiac troubles, the exophthalmic goitre being only a contributing cause of death. This statistical consideration, even if not complete in figures, shows that the mortality of 1: 100,000 means a grave prognosis for the disease, and that our ordinary treatment in a great percentage of cases fails to effect a cure.

The common treatment of exophthalmic goitre consists of general hygienic, dietetic, electro-therapeutic and medical measures. The medicines recommended are numerous, which is always a bad sign as to their efficiency; viz: iodine, opium, strophanthus, digitalis, phosphate of sodium, bromide, zinc, thymus and thyroid extracts, faradic and galvanic current, hot and cold water, sea-shore and high mountains, meat and vegetable diet, etc., are recommended and found worthless.

Our authorities on the practice of medicine consider the prognosis of Graves' disease serious. Strumpell says: "Complete cures are reported, but are rare; the final result is death by marasmus, or more frequently by complicating lung or heart diseases." Osler says: "A certain proportion of cases get well, but when the disease is well developed, recovery is rare."

No wonder that even the internists welcomed the attempts of surgery to cure this disease. To quote again from Osler: "Operative measures seem to offer the greatest relief."

The first who interfered surgically in Graves' disease was the English surgeon, McNaughton Jones (1874); he put a seton into the enlarged thyroid and cauterized the gland afterward with chloride of zinc. The first excision of the thyroid gland in exophthalmic goitre was done by Watson (1875). He was soon followed by Lister, Tillaux in France, and Rehn in Germany.

Kocher, Starr, Mikulicz and his assistant, G. Reinbach and Rehn have gathered good statistical reports concerning the operations. Kocher has the largest experience in operations on the thyroid gland, having performed over 2,000, fifty-seven of which were for exophthalmic goitre. We owe chiefly to him the development of the methods. Jaboulay, of Paris, and Jonnescu, of Bucharest, were the first to resect the sympathetic

*Read before the Surgical Section of the Wayne County Medical Society, October 5, 1903.

nerve as treatment for exophthalmic goitre.

In this country J. C. Witherspoon, of St. Louis, Deaver, of Philadelphia, Curtis, of New York, have tried to gain popularity for the surgical treatment in recent publications.

The chief argument, brought up again and again, against operation for Graves' disease, is that we do not know anything certain about the pathology of the disease. Indeed, it seems to be absurd to cut a goitre out if this is only one of the symptoms and not the seat of the disease or to resect the sympathetic nerve if the disease is perhaps located in the cerebral centres. To discuss this objection would mean repeating all the theories about the pathology of Graves' disease, but a perfect settlement of this question can not be reached until we have the desired pathological knowledge. The different surgical procedures on the thyroid gland have all the same end in view, namely, to reduce the size of the thyroid gland. The exophthalmic goitre is mostly of the hypertrophic parenchymatous and of a very vascular type; the blood vessels of the gland are immensely enlarged, the walls of the vessels are thin; the blood supply is so enormous that we usually have a pulsating vascular goitre in a well deformed case. Nodulous forms of goitre are not frequently met with in Graves' disease, unless the affection is secondary, that is if it supervenes a pre-existing goitre. The question is, can removal or reduction of this goitre influence the other symptoms of Graves' disease, such as the rapid heart action, the exophthalmus, the many vasomotor and mental disturbances? Such a result seems to be possible only when the primary pathologic changes producing Graves' disease are really situated in the thyroid gland.

There are eminent authors who believe this to be the fact and they bring forward the following arguments:

1. The peculiar opposition of symptoms in myxœdema and Graves' disease: here hypertrophy, there atrophy of the gland, here rapid pulse, profuse sweating, there slow pulse and dry skin, etc. If we have in exophthalmic goitre an increased function of the thyroid, we have in myxœdema a decreased function of the gland. Hyperthyroidism and hypothyroidism are names given to express this opposition of symptoms.

2. Feeding patients with thyroid extract produces symptoms similar to those seen in Graves' disease.

3. In simple goitre also we often see quick pulse, changes in the vasomotoric sphere, slight exophthalmus, symptoms called thyroidism (Miculicz) and, if aggravated, some even speak of "Pseudo-Basedows" disease, (The Germans call exophthalmic goitre "Basedow's disease.")

If these points seem to support the theory that the thyroid gland is primarily the affected organ, the objections are that the pathologists have so far failed to prove uniform changes in the thyroid gland in Graves' disease, and furthermore that we have cases of the disease without goitre. As to the second objection; these cases without goitre are certainly rare; Kocher never saw a well developed case of Graves' disease without a goitre. There is only one case on record (Hinchman), in which the thyroid gland was absent as proved by autopsy, and even in this case the question of a parathyroid gland was not fully settled.

Other authors (Mikulicz, Reinbach) believe, that exophthalmic goitre has its origin in the vaso-motoric centres. The increased internal secretion of the enlarged thyroid gland only aggravates the symptoms and operation simply eliminates this factor.

In an analogous way the theory that the disease has its primary changes in

the sympathetic nervous system explains the recommendation, to operate on the sympathetic nerve, in order to influence Graves disease. This is only a theory, however. More probably the cutting of the sympathetic nerve first causes changes in the nutrition of the thyroid gland through vasomotoric influences, further it causes changes in the innervation of the smooth muscles back of the eye-ball, which are held responsible for the exophthalmus; and third, it alterates the nervous influences on the heart. In this way, sympathectomy probably corrects the three cardinal symptoms, Tachycardia, goitre and exophthalmus. (Jonnescu, Ballacescu, Curtis).

Further pathological research, however, must settle these interesting problems. Meanwhile, since empirical knowledge often precedes scientific research, the good results of the operation are the best proof of its justification. We often open the peritoneal cavity for tuberculous peritonitis, without being able to declare the astonishing cures effected by this simple method. Hence we should accept the simple but convincing argument of success in operations for Graves' disease, until the progress of pathology shows the scientific foundation explaining their action.

The question when to operate in Graves' disease is answered very differently by the authorities on this subject. We take, first, the two extremes; one surgeon claims every case for the knife, (Lemcke); others, (Wolfer, Buschan) consider cases of Graves' disease a *noli me tangere*, or out of the surgeon's sphere.

Most internists, like most surgeons, follow a middle course: as strict indications for operation pressure on the trachea causing dyspnœa is recognized. This does not often occur in exophthalmic goitre. Otherwise, the usual rule is: If internal treatment fails after a fair trial, if the symptoms are progressive in character, if the patient is losing in strength and weight, the case should be turned over to the surgeon. Very bad cases, with high pulse-rate, should be treated, first, by rest in bed, to get the heart in better condition for the operation. Cases should not be allowed to reach the extreme stage of cachexia and coma, a condition in which even surgical interference can not save life.

As already mentioned, there exist mainly two types of operations for the relief of exophthalmic goitre; 1, operations on the thyroid gland; 2, operations on the sympathetic nerve.

1. Operations on the thyroid gland. (a) Injections of iodine, etc., etc., if already dangerous in common goitre, should never be done in exophthalmic goitre, where the great vascularity would increase the danger of embolism. I know of a lady from whom I removed a large nodulous goitre who came near dying from asphyxia immediately after an injection of iodine. (It must be mentioned though that Rehn uses injections of iodoform glycerin sometimes). (b) Exothyropexy was recommended by Jaboulay. The operation consists in freeing the thyroid gland from the surrounding tissues and leaving it outside of the skin wound to atrophy. This method is dangerous and slow, does not harmonize with modern surgical ideas and has not been done very often. (c) Resection of the enlarged gland. Under this head several operations should be mentioned. If we have distinct nodules in the gland, which is not frequent in exophthalmic goitre, the enucleation of the single tumors is indicated (Socin). The resection of parts from both sides of the gland, as Mikulicz does, will, it seems, prove to be too bloody a procedure in exophthalmic goitre. However, he had good results with the method in nineteen cases (Reinbach). The operation mostly performed is the excision of

one side of the enlarged gland, (Wolt, Rehn, Kocher). If one side of the gland is larger than the other, which is quite frequent, certainly the larger side should be removed. The method consists, briefly, in a bow-shaped (Kocher) or angular (Miculicz) incision along the sterno-mastoid muscle, then around the lower circumference of the tumor and up on the edge of the other sterno-cleido-mastoid muscle. The outlined flap, including skin and platysma, is dissected upward. All cut vessels are ligated immediately. The sterno-mastoid muscle is exposed, retracted well, also the sterno-hyoid and sterno-thyroid are exposed, retracted, or, if space requires it, cut. The goitre is then freed from its capsule, a step which on account of adhesions and hemorrhage, is difficult in exophthalmic goitre. The tumor is then luxated from its bed between muscles, large vessels and trachea. The thyroid arteries are now ligated, avoiding the recurrent laryngeal nerve, also all accessory vessels. The gland is pulled out more and more and finally tied off on the isthmus. This requires the thermocautery, or better three or four stout ligatures, as the isthmus is commonly very broad in exophthalmic goitre. Suturing with or without drainage completes the operation. (d) Ligature of arteries is the favorite method of Kocher, the master of this operation. He usually ligates both superior thyroids and one of the inferior arteries. He considers ligature of all four thyroid arteries to be dangerous, on account of the possibility of being followed by post-operative myxœdema, unless accessory arteries provide sufficient nutrition for the gland. Kocher very often combines resection of part of the gland with ligature of vessels, just as the size of the gland requires. The ligating of the superior arteries is easily accomplished by tying them close to the carotid: the inferior artery is not reached so readily without resecting the goitre and is more dangerous on account of the proximity of the recurrent laryngeal nerve. Ligature of the carotid has also been done, but only in exceptional cases.

Operations on the sympathetic nerve are done mostly after the method of Jaboulay and Jonnescu, who employ sympathectomy in exophthalmic goitre in glaucoma, epilepsy and hemicrania. The nerve is reached by a long incision along the posterior or anterior side of the sterno-mastoid muscle, the muscle, carotid artery, jugular vein and vagus nerve are retracted forward and the ganglia found on the deep muscles (Jonnescu). Some resect only the upper ganglion, others all three ganglia, or stretch the nerve, and still others make an evulsion of the nerve. The method which is followed by the best results seems to be the excision of all three ganglia on both sides, best done in two sittings (Ballacescu and Curtis). It should be mentioned that Kocher also combined sympathectomy with resection of the thyroid or ligatures of the arteries.

All these operations for exophthalmic goitre are by all means to be called dangerous, and even in the hands of the best surgeons the mortality rate is about 6 to 10 per cent. The reasons for this are: 1, the anæsthetic. In eight fatal cases collected by Rehn, where the cause of death is given, two died under the anæsthetic. One case of sympathectomy, the only fatal one out of seventeen operated upon by Jonnescu, died on the table from chloroform. I could not ascertain from the literature if the mortality was greater, when chloroform was administered or when ether was used. However, there is no doubt that the mortality from the anæsthetic is unusually large in goitre operations. This fact caused many surgeons to operate upon goitres only under local anæsthesia, and Kocher in particular follows this rule. The anæsthesia is produced best by the infiltration method after Schleich. I can assure you, from a

personal experience on two exophthalmic and six common goitres, where I used cocaine infiltration, that this method is very practical. I never yet had to change to a general anæsthetic, in spite of the fact that some of the patients had very large tumors and had to be on the table for an hour.

After the skin is well infiltrated with the solution,—I use cocaine gr. 1, morphin 2-5 gr., NaCl. Gr. III, H 2 O ʒ III 2-5—the operation on the deeper structures is not very painful. The extracting of the tumor, the pulling on the trachea, is felt more as a choking sensation than as a pain. I even consider this an advantage compared with a general anæsthetic, where undue pressure or pulling on the trachea is not noticed until the patient is cyanotic. With cocaine infiltration the patient will say: "Let me get air for a moment; Let me expectorate," an advantage which prevents asphyxia as well as post-operative pneumonia.

The opinion brought forward that cocaine increases the symptoms of Graves' disease has not been proved to be true, and besides the solution contains only one-tenth of 1 per cent. of cocaine, of which even 4 to 6 oz. are tolerated well.

2. The second danger of operations on exophthalmic goitre is hemorrhage. Pathologic characteristics of the disease are, fine structure of arteries, dilated blood vessels, the great vascularity of the goitre, symptoms sufficient to declare the great liability to hemorrhage. To minimize this danger, every vessel should be ligated before being cut; the goitre proper should be handled as little as possible until the main thyroid vessels are secured. Tamponade and thermocautery should not be used as agents to control hemorrhage—unless required by extremely dangerous conditions—as secondary bleeding is liable to occur.

3. The third and most peculiar complication of these operations belongs to the post-operative period and composes a complex of symptoms, called "Thyroidism." This means an aggravation of symptoms, which are referred to poisoning with the thyroid secretion. Many authors believe that these symptoms are caused by pressing thyroid secretion into the circulation by means of the handling of the gland; but the same symptoms are observed after sympathectomy, where the gland is hardly touched, and Rehn reports a case where even an ovariectomy on a patient suffering from Graves' disease was followed by fatal thyroidism. The question how these post-operative symptoms are caused is therefore unsettled; it seems that the peculiar nervous irritability, plus the action of the thyroid poison, is responsible. Reinbach and others claim that operations even on simple goitres are always followed by fever and elevation of pulse-rate without the wound being infected. Kocher disproved this by his large experience, and I could show you charts where the post-operative period after goitre enucleation is just as uneventful as after any other operation, though there is no doubt that patients after operations for goitre, and especially after those for exophthalmic goitre, are very liable to suffer from post-operative disturbances called thyroidism. The symptoms comprising this are, high pulse-rate of 160 to 200—it is peculiar that this frequent pulse, on account of high tension, is often well countable—increased number of respirations, often Cheyne-Stokes' respiration — great excitement, delirium, tremor, perspiration, diarrhœa, and, in extreme cases, attacks of tetany. This post-operative complication very often results in death. The treatment consists in combined sedative and stimulating medication. Saline infusion proved efficient in a very serious case I saw. Thyroidism then is quite frequent after operations, and there seems to be no difference whether a thy-

roidectomy, a ligature of the blood vessels or a sympathectomy is done. Of Kocher's four fatal cases, two died of thyroidism; of eleven cases of thyroidectomy by Curtis three died of acute thyroidism; of seven sympathectomies by the same author two were followed by fatal thyroidism.

Of Jonnescu's cases of sympathectomy many were followed by "excitement, delirium," etc.

The method of operation, therefore, seems not to have any influence on the occurrence of this grave complication. It seems to happen more after operations on very weak patients; hence the only prevention against this occurrence seems to be to get the patient in as good condition as possible before the operation and to handle the tissues of the gland very carefully during the operation to avoid pressing the thyroid secretion into the circulation.

After exposing the dangers of surgical interference for Graves' disease, it may seem absurd to entertain the idea of such procedure, but we must not forget first, that operation is often resorted to only if the patient is in extreme danger, and further surgical treatment has certainly good results in many cases. Kocher reports from his own experience, 59 operations, of which 45 patients were cured, 8 much improved, 2 slightly improved, 4 died. Rehn collected from the literature and by correspondence with reputable surgeons all over the world, 291 cases of thyroidectomies, of which 165 were cured, 77 improved, 12 not improved, 37 died; Curtis reports 11 thyroidectomies with 6 cures, 2 not improved, and 3 deaths; Witherspoon 8 cases of thyroidectomy with one death. The mortality differs therefore from 6.3 per cent. (Kocher) to 13.1 per cent. (Rehn). In Rehn's statistics we find the serious cases distinguished from the moderate and light cases, and then the death rate of the aggravated cases is 23.6 per cent. against only 1.8 per cent.—4.2 per cent. in medium and slight cases. This gives valuable suggestion as to the time for operating.

It remains for us to compare the results of the different operations. The ligature of the thyroid arteries and the thyroidectomies seem to have about equal standing as to number of cures and number of deaths. The question as to the value of sympathectomy is not yet settled. Kocher and most of the German surgeons favor thyroidectomy, or ligature of the thyroid arteries; Jonnescu and many French surgeons prefer sympathicus operations; Deaver, of Philadelphia, has spoken very decidedly in favor of the later method, but he has reported only one case of his own and based his opinion more on Ballacescu's report of Jonnescu's cases. Rehn collected 32 sympathicus operations with 9 cures, 16 improvements, 4 not improved and 3 deaths—9. 3 per cent.; Curtis made 7 complete sympathectomies with 3 deaths (2 from thyroidism, 1 from anæsthetic). Exceptionally good is the report of Ballacescu, on which, as I have said, Deaver based his decision in favor of sympathicus operation; the Roumanian surgeon reports 17 total sympathectomies with 10 cured, 5 improved, 2 not improved. He does not consider in his report a case of death from anæsthesia, mentioned in the same publication, which would give 5.8 per cent. mortality. Also in other respects, length of observation of patients, etc., his statistics are open to criticism. But still he claims a great many successes.

The dangers of operating, as shown seem to be the same in sympathicus and goitre operations. A comparison of the two operations as to number of cures and deaths will hardly be possible, the number of sympathicus operations being so far too small to allow safe conclusions.

I will give you, very briefly, the report of three cases in my own practice:

1. Mrs. B.—28 years old; married. Symptoms before operation—Large nodulous goitre of the isthmus. Pulse, 110-120. Slight exophthalmus—Graefe's sign. Nervous spells. Operation under chloroform, September 28, 1900. Enucleation of the goitre, which was a large cysto-adenoma. Result—Pulse normal. Exophthalmus and Graefe's sign disappeared. Good result is continuous. Remarks—The tumor was not the typical one as we find it in Graves' disease, and the case may be termed by some a "Pseudo-Basedow."

2. Mrs. G. J.—31 years old. Operation February 3, 1901. Symptoms before operation—Well developed case of Graves' disease. Exophthalmus. Graefe's sign. Pulse, 120. Goitre very much enlarged, especially left side of thyroid gland. Operation—Resection of left side of thyroid gland, under Schleich infiltration anæsthesia. Recovery uneventful, excepting slight rise of pulse and temperature. Result—*Complete* cure as to pulse-rate, goitre, exophthalmus and nervous symptoms.

3. Mr. W.—40 years old. Brakeman. Operation February 23, 1903. This is the man I am presenting to you tonight. Symptoms before operation—Sickness began rather suddenly, February, 1901 with dizziness, loss of appetite, nervousness, tremor, rapidly enlarging goitre, exophthalmus, heart-palpitation. Before operation patient was very much emaciated (weight 108 pounds). The goitre was a very large, vascular, pulsating one, particularly comprising the right side of the thyroid gland and reaching from the angle of the jaw to the sternum. Pulse, about 120. Exophthalmus very marked. Graefe's and Stellwagen sign. Polyuria of 10,000 CC. in 24 hours. Sugar was found several times in the urine, but not constant. Great nervous depression. Tremor of tongue and hands. Pulsation over all peripheric arteries. Perspiration. In short, patient was in the last stages of severe Graves' disease. Operation, February 23, 1903. Resection of right side of thyroid gland under cocain infiltration. Tumor was very vascular and adherent. Operation was followed by very severe thyroidism, lasting five days, characterized by high, irregular pulse, up to 180, Cheyne-Stokes respiration, fever, delirium. Patient made a good recovery and is now, five months after operation, as you see, very much improved, perhaps cured. He is able to work again. His pulse is about 84; the thyroid gland shows some swelling on the isthmus, where the right wing was resected. The left side is normal. Exophthalmus hardly noticeable. No Graefe's sign. Weight, 152 pounds (108 before operation). The urine is normal in quantity, around 1,200 cc. (10,000 before operation). No more sugar in urine. The time of observation of this last case is too short to allow us to consider it a complete cure, but the result is remarkable in the beneficial changes it has caused.

If I may summarize:—

1. Exophthalmic goitre is successfully treated by operation in a great majority of cases (about 75 per cent.)

2. The death rate of the operation is very high, but in the hands of skilled surgeons is reduced to 6.3 per cent. (Kocher), and in cases operated upon early as low as 2.4 per cent. (Rehn).

3. The principal dangers from the operation are death from the anæsthetic, hemorrhage and post-operative thyroidism,—dangers which may partially be avoided by the use of local anæsthesia, by skilled manipulation, by proper preparation of the patient and by early operation.

4. The question, whether or not operations on the thyroid are preferable to those on the sympathetic nerve cannot be decided until we have fuller statistics of the results of sympathectomies at our disposal.

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THE ESSENTIAL NATURE OF REFLEX ACTS AND INSTINCTS.*

By A. W. IVES, M. D.

So much that is new and interesting, and it seems to me almost revolutionary, in the field of the physiology of the nervous system, especially the physiology of reflex acts, instincts, spontaneous movements, etc., has been discovered and demonstrated by Professor Jacques Loeb, late of the Chicago University, and his school, that, taken in connection with a few ideas of my own, I have endeavored to formulate and give it to the Society, feeling from conversations with some of its progressive members, that it will be mostly new here.

This work has succeeded in giving nervous physiology a real, a physical basis, removing such metaphysical terms as consciousness, soul, will, etc., substituting real physiological processes and experiments for these inadequate conceptions.

The understanding of complicated phenomena depends upon analyses, by which they are resolved into their simple elementary components. All the complicated phenomena of the nervous system seem to resolve themselves into a class of simple processes called reflexes.

A reflex act has been defined as an action resulting from the stimulation of a sensory, or, more correctly, an afferent nerve; the action, of necessity, being the consequence of this impulse traveling to a tissue on an efferent nerve; or again: as the immediate, unreasoning response to a stimulus. The action is, however, generally called reflex only when an organ or muscle, or group of muscles responds to the stimulus; when the animal as a *whole* responds, it is called *instinct*; there is manifestly then no *essential* difference between the two.

Reflex acts are generally so well planned, so purposeful, that there has always been a tendency, avowed or inferred, to give intelligence some part in the rôle, either in devising or carrying out the reflexion. If it can be shown that reflexion is common to animals with and *without* a nervous system; to low forms of animal life, even after removal of the nervous system; in *fact*, is common to plant life as well; then it would seem to remove the supposed mysterious action of the ganglionic cell, making it a property common to *all* protoplasm.

In low forms of life, both plant and animal, the tissue stimulated is not only irritable, but conductile and contractile. All then that is *necessary* to a reflex act is irritability and conductibility. In highly organized animals, the nerves and cells form the only possible protoplasmic chain between the point of stimulus,—the skin for instance—and the muscle moved. Therefore, without this protoplasmic connection, there can be no reflex act.

It has also been experimentally demonstrated, as we shall see, in low forms of life which respond to stimuli, either with

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their rudimentary nervous system *in situ* or removed, that nervous tissue is more sensitive and a quicker conductor of impulses than undifferentiated protoplasm, or in fact than any other tissue. This is also true, as we know, of the higher forms of life, and nerves are only absolutely necessary from a reflex standpoint, because of the wide separation of the point of stimulus from the part that acts.

As with simple reflex acts, so with instincts, consciousness and other psychic phenomena, must the methods of investigation be the same, that is, the elementary physiological acts that underlie them all must be discovered.

Most physiologists and psychologists consider the purposefulness of the reflex action the essential element. If a lower animal reacts to a stimulus as a rational man would under the same circumstances, they assert that we are dealing with phenomena of consciousness and intelligence. Consciousness has been ascribed even to the spinal cord, because its reflexes are purposeful. Loeb says on this subject: "We can dispose of this view by the mere fact that the phenomena of embryological development and of organization in general, show a degree of purposefulness which may even surpass that of any reflex, or instinctive, or conscious act, and yet, no one considers the act of development to be dependent on consciousness (or intelligence.) The mistake made by metaphysicians on this subject is that they employ wrong methods of investigation, substituting a play of words for explanation by means of facts."

In its simplest form the movement of the amœba when stimulated is a reflex act; it responds to a stimulus; in its very *broadest* sense every action of ours, whether the immediate, unreasoning response to a stimulus, or a delayed, well thought-out action, is reflex in character.

Not only are the ganglionic nerve cells not necessary to a reflex act, but neither are they necessary to the rhythmic contraction of muscle. An excised skeletal muscle of a frog which would not spontaneously contract, can be made to do so rhythmatically in a solution containing Na Cl, or Na Br of the same osmotic pressure as the blood, and can be stopped at will by the addition of a small quantity of calcium salts (CaCl). Certain salt-water animals can be made to beat rhythmatically, or stopped at will, by the addition of either Na or Ca ions. The apex of the human heart contains neither nerve-cells nor fibers, yet it beats rythmatically with the rest of the heart-muscle, the impulse causing it thus to beat, must be carried from muscle fiber to fiber. Furthermore the excised apex of a mammalian heart can be made to beat, under favorable conditions.

Stated briefly, the spinal cord is composed of a collection of reflex centers, for acts comparatively simple in character, acts not dependent in any way on the encephalon. The bulb contains centers more complex, more vital in action, the afferent stimuli of which are more varied. The cerebellum and cerebrum consist of centers coördinating larger groups of muscles in more varied manner. Especially are their afferent impulses *much* more varied. In the cerebellum are found centers coördinating acts the afferent and efferent impulses of which occur simultaneously, and in which space is a factor. It is found relatively large in animals whose movements through space are rapid and exact, for instance, in birds of prey. The cerebrum coördinates acts occurring in sequence, that is in which *time* is a factor, acts performed *now*, the several afferent impulses of which have occurred in the past. Taken in this broad sense, our every act is performed as it is *now*, because of impressions received throughout our entire past.

acts we call intelligent, the result of reason and thought. There is, however, no valid excuse for removing them from the category of reflex acts.

Every one now accepts the theory of evolution; in doing so he tacitly concedes that the differences between the structure and actions of the lowest and highest forms of animal life, great as these differences now are, are differences of degree and not of kind. Not only this, but we find even in *vegetable* life, acts which resemble those of animals, that is, purposeful reflex acts. The tendrils of many climbing plants float about in the breeze until they come in contact with some small twig, when they immediately commence to bend toward the point of contact or stimulation, continuing to thus bend until they have encircled it several times, affording thus a firm support for the plant. A similar act performed by an animal is called instinct. A certain plant, commonly called the fly-catcher, exudes from the upper surface of its leaves, a viscid secretion; should some luckless insect chance to light thereon, it is held fast, while the leaf folds over it, holding it until it is digested and absorbed, when the leaf slowly unfolds and is ready to repeat the operation. These acts, eminently purposeful, are called reflex. In plants as well as in animals, the stimulus is stereotropic. Certain plants turn their leaves and bend their tips towards the light, a heliotropic action. The light striking the plant on one side causes a contraction of the protoplasm of this side, thus offering more resistance to growth on this, than on the other side, and the stem of necessity bends that way; as soon, however, as the stem points directly at the light it is symmetrically stimulated and continues to grow in that direction. When an animal, as the moth or June-fly, is oriented towards the light, it is considered a special instinct, even though the animal so flies to its own destruction, in the case of the animal as of the plant, it is due to positive heliotropism; there is no more curiosity, or love of the light in the one case than in the other. It has been experimentally shown that when the light strikes the moth on one side, those muscles which turn the head towards the light become more active than those of the opposite side, *impelling* the animal that way; as soon as it has this orientation, being symetrically stimulated, both sides are equally affected and it flies in that direction because forced to do so, and moving rapidly, as it does, it gets into the flame before the heat of the flame has time to check its flight. There is no mysterious flying-in-the-flame center; the nerve-fibre and its cell, of which it is an outgrowth, are only needed in the case of the moth because the wings moved are situated so far from the point of stimulation, while in the plant and in low forms of animal life the part stimulated and the part moved are the same.

The small animal, the Ciona Intestinalis, furnishes us valuable information as to the *exact* rôle played by the nervous system. If either the oral end or the aboral end be stimulated, both openings close and the entire animal contracts till it becomes small and round, a typical reflex act caused by the contraction of its sphincter and longitudinal muscles. By this eminently purposeful act, the entrance of foreign substances into the body cavity is prevented.

I have wondered if the instinct, so-called, impelling animals to flee from danger, might not in the course of evolution have come about in the following manner: All low forms of animal life live in water. A very *slight* stimulus, as in the case of some plants, generally causes a slight tension of the protoplasm and a bending of it towards the point of stimulation; in this manner they slowly surround and digest food particles with

which they may come in contact. Water offers practically *no* resistance to slowly moving bodies, but increases this resistance in geometric ratio, with rapidity of movement. Hence, a stronger stimulus, such as might portend danger to the welfare of the animal, would cause rapid enough movement of its protoplasm *toward* the point of stimulation, to force the animal *away* from the source of danger. Following out the law of the survival of the fittest those animals which showed this reaction best would survive and propagate their kind.

Referring again to the experiment on the Ciona it may be remarked that this low form of life has a few ganglionic cells with afferent and efferent fibers, which were supposed, naturally, to take a necessary and essential part in the reflex act. This has been disproved by the fact that after removal of all nerve cells, the animal will again respond to the same stimulus in the same manner, except that the stimulus must be somewhat stronger, while the response is somewhat slower. To be exact, in a normal animal a drop of water must fall from a hight of between 4 and 10 mm. in order to obtain the response, after a lapse of two seconds, while in an animal whose nervous system had been removed, the threshold of stimulation varied between 20 and 80 mm., and response was obtained in about eight seconds, proving in the case of this animal at least that while the nervous tissue is more sensitive and a more rapid carrier of the impulse it is not an essential.

It has been shown by several authorities that the pupil of the excised iris still contracted to light, and that in sharks whose entire brain had been removed the pupil still responded sluggishly, several hours after such removal, showing that the muscle elements of the iris respond directly to light stimulation.

Some very interesting experiments have been performed on a group of animals, the Actinians, which cannot be said to possess any nervous system. If a wad of filter paper which has been soaked in sea-water, be placed on the tentacles of one of these little creatures it is allowed to drop off, while a small piece of crayfish meat, which to us does not differ in taste from the wad of paper, is usually quickly accepted and swallowed. In this animal, new tentacles can be produced by making a slight incision into the body. These new tentacles behave towards food exactly as do the original, normally placed ones, and press the particle of meat toward the spot where the mouth, in relation to themselves, ought to be; in cases in which the same bit of food stimulated both the normally and the abnormally placed tentacles, a struggle invariably arose between the two systems. Parker has recently shown that a single detached tentacle reacts in the same manner. Again if this animal be divided transversely, a new mouth and tentacles will form, with reactions similar to those of the original mouth. The foot of the Actinia attaches itself firmly to the surface of solid bodies, even if three-fourths of the upper portion of the body has been amputated. The animal as a whole responds to gravitation, is positively geotropic, and if placed head down in a test tube, immediately begins to bend its pedal extremity downward, continuing this action until in about an hour it has completely righted itself. That gravitation (geotropism) and not contact irritability (stereotropism) caused this action was proved by placing the animal on a wire netting with meshes so small that the body could be drawn through only by force. In a few minutes, the foot began to bend downward and work its way through one of the meshes; this action continued until it had assumed a vertical position, which it did in about half an hour; the wire net was now turned over,

when the tip of the foot again began to bend downward, pushing itself through a mesh as far as possible; this was repeated several times till the little creature had assumed the position of a letter "S," turned on its side.

This same *positive* geotropism is shown by the roots of all plants, while the stems are *negatively* geotropic. There is no reason to believe that the processes are not the same in both plant and animal life, or even that in higher animals this tendency to give their bodies a certain orientation in space, is not, though much more complex, essentially the same process.

Looked at without prejudice, these experiments prove that the reaction of the tentacles is determined by the irritability of the tentacles themselves, and the arrangement of their contractile elements, and that the reaction is chemiotropic while that of the foot is stereotropic, and that of the entire animal, geotropic.

Let us look into the case of the star fish, with its central nerve ring of ganglia and fibres around the mouth, and peripheral nerves extending into each of its five arms. In its normal condition, this animal can soon right itself when placed on its back. It begins the movement by stretching out and feeling about with all its arms at once; as soon as the under surface of the tip of one of these touches the underlying surface and its sucker-like feet become attached thereto, the animal performs a somersault, regaining its normal position. Never more than three of the arms attach themselves at once, should all five, or even four, do so it would render it impossible for the animal to turn over. It would seem that the stimulus produced by the pulling of two or three arms had a inhibitory effect on the others. This inhibition ceases if the integrity of the nervous ring be destroyed, in which case all the arms flop around and pull to no purpose. This would seem to give the ganglia some mysterious power and make them a necessary part of the reflex act, were it not for the fact that a single amputated arm without any ganglionic cell, rights itself when placed on its back, proving that the nerve ring does not act as a center in the ordinary acceptance of the term, but only as a conductor of impulses. Other simple experiments proved that the reaction was stereotropic, not geotropic.

In an earthworm, if the nervous connection between the head ganglia or brain and the posterior portion be severed, it is found that the animal's power of locomotion is not noticeably impaired; it moves off apparently as easily and rapidly as before the operation. This overthrows the theory that the coördination of these movements is presided over by any single center, especially by one situated in the brain. It would seem that the stretching of the skin when the animal elongates itself must be the means of carrying the impulse from the part supplied by nerves in front of the point of section to those parts behind. Friedlander has recently performed experiments which seem to prove this theory. He cut worms in two; after such an operation the front part shortly moves off as though nothing had happened, while the posterior portion, after wriggling violently for a while, remains more or less quiet, or it may crawl about. He now connected the two halves by a thread tied near the cut, when the anterior portion moved off; the posterior followed with movements as well coördinated as before the cut.

Crickets and bees which have been decapitated, after recovery from shock, are still able to walk about, and when stimulated, make attempts to fly. A male and a female cricket in this decapitated state were able to pair. When laid on their backs they could right themselves. Bees whose entire body and head were removed, leaving only the abdomen, were able when stimulated to perform the

stinging act, ejecting poison at the same time.

If a constant current of electricity be sent through a trough in which young salamanders are placed, peculiar changes are observed, dependent on the direction of the current. If it be passed through them longitudinally with the positive pole at the head end, the back of the animal becomes convex, the feet are braced backwards, the gills lie close together. If, on the other hand the current is reversed, the back becomes strongly concave, the feet braced forward, and the gills widely separated. This is a galvanotropic reaction. Recalling for a moment the different effect that the positive and negative poles exert on animal tissue, namely, that the positive pole is hemostatic, is sedative, tends to harden tissue, is vaso-constrictor, is an acid caustic, causing a hard unyielding cicatrix; while the negative pole produces exactly opposite effects, it is easily understood why the salamander is so differently affected, and to see that the movement towards the anode, which it invariably makes, is not because it wishes to, but because it *must.*

The discrimination between ordinary reflex acts and instincts is, as we have seen, chiefly conventional; in both cases we have to deal with reactions to external conditions and stimuli, reactions which though purposeful, are unconscious; they are called instincts only when the entire animal reacts. The female fly lays its eggs, not on fat or gelatin, where they would die, but on meat or cheese which forms their proper pabulum; this is an instinct and the fly has been given credit in thus caring for the future welfare of its progeny, which it immediately deserts for good and all. The fact that a decapitated fly will under proper conditions, act in the same manner, removes this action from the realm of maternal care in which intelligence plays a part, to that of chemiotropism; there must be an aroma arising from decaying meat or cheese which chemically stimulates the muscles of the sexual organs and the eggs are laid. The fly can no more help laying them under these conditions, than the plant can help turning towards the light.

The instinct which many insects and worms have of crawling into cracks, would need a special center, a crawling-in-a-crack center. Loeb has discovered that certain animals and plants are forced to orient themselves in a definite manner toward solid bodies with which they come in contact; this kind of irritability he named stereotropism, of which there is a positive and a negative variety. When a tubularia is brought in contact with a solid surface, the polyp and bending tip grow *away* from the surface while the stolon adheres to it; the former is negatively stereotropic, the latter, positively so. The tendency of animals to creep into cracks has nothing to do with the instinct of self-preservation, as many do so after the brain and even the head has been removed, and in worms that have been cut in pieces; others will crawl in small glass tubes where they remain, exposed to the direct sun rays, which kill them. The reaction again, is stereotropic and the will or intelligence plays no part.

An interesting feature concerning instincts is that certain of them can be controlled by simple means. Many of the lower marine animals which normally are negatively heliotropic can be forced towards the light either by lowering somewhat the temperature of the sea-water in which they live, or by increasing its concentration, whereby the cells of the animals lose water. Plant lice can be made to exist in the winged or the wingless state. Wings can be caused to grow at any time by lowering the temperature, or letting the plant dry out, changing somewhat the condition of their protoplasm in each case. Thus not only can the phenomena of growth and nutrition

be controlled, but the instincts as well, indicating that there is a common basis for both classes of phenomena, which common basis is the physical and chemical character of their protoplasm.

It is a generally accepted belief that secretion of milk by the mammary glands during and after pregnancy, resulted from and was dependent upon, impulses passing from the uterus to these glands at this time. Goltz severed the spinal cord of a female dog in the pectoral region which afterward became pregnant. At the proper time the glands in front and behind the place of section, secreted milk equally well. Still more surprising was the same result obtained after transplanting a mammary gland of a guinea pig from its normal location to its ear; after it had become well established in its new position, the pig became pregnant, when the gland on the ear secreted milk along with those which had been left in their normal position. The only possible conclusion to be drawn from these cases is that some changes in the blood or lymph must be the cause of this secretion, changes brought about by the altered condition of the maternal organism. Goltz has made a remarkable discovery which seems to confirm the opinion that even in the higher vertebrates the instincts observed at time of giving birth to young;—as in the female dog, the biting off of the navel cord, the licking of its young, the affection towards them, and increasing ferocity toward strangers, belong to the same category. He found that these instincts persist, even though the spinal cord, long before this time, has been severed so high up that no stimuli from the uterus can reach the brain. It is probable that, as in the case of secretion from the abnormally placed gland of the guinea pig, certain substances are formed during this period which influence the character of the animal and set free these inherited instincts.

All text-books and physicians have remarked, not only the nausea accompanying pregnancy in woman, but also, a more or less pronounced change in her temperament. Is it not probable, in the light of our recent knowledge, that all these changes of her body and mind are caused by the altered composition of her blood, due to the great amount of nutritive material taken from, and of excrementitious matter thrown into it by the rapidly growing foetus?

Not only do substances taken into the body from without, such as alcohol, tobacco, morphine, etc., profoundly influence the actions and reactions of human beings, but so do abnormal quantities of substances produced from within, noticeably the irritability of glycosuria, and the condition known as cretinism from lack of thyroid secretion; also the profound effect on body and mind of asexualization if performed early in life, thus depriving the blood of the internal secretion from the testes or ovaries; or acromegaly, due to impaired function of the pituitary body.

We must agree with Loeb that it is not impossible that hereditary mental diseases are in reality chemical diseases caused by poisons formed in the body, and fed to the germ or sperm cell, giving it an unhealthy and abnormal composition.

22 Montcalm Street West.

Persistent reports appear from time to time to the effect that J. Ogden Armour will establish chairs of orthopedic surgery after the Lorenz school, in at least one hospital in the leading city of every state and territory in the United States and the District of Columbia, and several in Canada. This is said to be the result of Mr. Armour's complete satisfaction at the happy result of Prof. Lorenz's work on his daughter Lolita. It is also intended as a rebuke for the American physicians who do not endorse the Austrian's method.

EYE CLINIC AT ST. MARY'S HOSPITAL, OCTOBER 22, 1903.

By EUGENE SMITH, M. D.,
Professor of Ophthalmology and Otology in the Detroit College of Medicine.

Gentlemen, I have several operations for your consideration this morning; four for cataract and two for congential entropion of the under eyelids—a very rare case. Two of the cataracts are senile, and call for the same operative measures and treatment which you have witnessed several times so far this term. While you may, perchance, think our many cases of cataract may be "chestnuts" before the school term ends, let me assure you that only by iteration and re-iteration can you become so familiar with medicine and surgery as to make successful practitioners.

Ophthalmologists occasionally (too frequently) see cases of hopeless blindness due to glaucoma, which has been mistaken for cataract, the patient having been told by their physician to "Wait 'till you are totally blind, then the cataracts can be removed and your sight restored." I hope, gentlemen, none of you will ever make such a blunder.

Cataract, gentlemen, has many subdivisions, but the general division into hard and soft, or senile and juvenile, is quite sufficient at this time. Generally speaking, before 35 years of age cataracts are soft; after 35, cataracts are hard, at least the nucleus is hard, and cataracts are called senile. The opacity of the lens—and it is this which constitutes cataract—may be slow of growth or rapid, i. e., it may fully develop in a few weeks or months, or it may require years to become what we call "ripe." A cataract is said to be "ripe" when the pupillary margin of the iris cast no shadow upon the lens.

The etiology of cataract is said to be some interference with the nutrition of he lens. The treatment is surgical. All you may read or hear about the cure of cataracts by the so-called "absorption" treatment is "bosh" and quackery.

In my opinion, the best treatment for hard or soft cataracts is *extraction*. Discission of the lens in cases of congenital cataract is advised and practiced by good operators, but there are some of us who prefer extraction.

This first case is a gentleman aged 73 years, from whose left eye I extracted a cataract two years ago. His sight is about perfect with this eye, and he has a perfectly normal central pupil, with no haziness of the capsule. He has returned for an operation on his right eye, and I proceed to extraction by the classical method, i. e., simple flap extraction, making the flap by a puncture and counter-puncture with a Graefe knife just above the horizontal meridian in the clear cornea, then cutting upwards till the apex of the flap lies just in front of the limbus. I now introduce my capsule forceps and extract a piece of the anterior capsule. I find by actual measurement that the pieces of capsule extracted in this way averages about 5 mm. square. By pressure with the spoon backwards and upwards on the cornea in front of the lower periphery of the lens, you observe the upper half of the iris pushes forward and upward till the pupillary margin is in the corneal wound; then the border of the lens presents itself, coming through the pupil. The upward pressure of the spoon is continued till delivery takes place. Usually the iris replaces itself, should it not do so, I replace it with a small spatula. Frequently a little cortical debris remains and can be coaxed out after a few minutes' delay. If not easily removed, however, attempts to remove it may do more harm than its presence will. Two or three drops of a 1-grain solution of eserine are dropped into the conjunctival sac, a small pad is placed over each eye and fastened with adhesive strips, the patient is given a $\frac{1}{8}$ grain of morphia hypodermatically, and removed to his bed where he remains from three days to a week. The patient is given a $\frac{1}{8}$ grain of morphia hypodermatically every three hours till the patient has had four doses in all.

In the use of morphine, gentlemen, I have two objects in view; first, to maintain a contraction of the pupil, which, you know, is one of its physiological effects; second, to relieve the discomfort, nervousness and spasmodic twitching of the eye muscles which sometimes accompany operations on the eye. Extraction of the

anterior capsule does away largely with the necessity for discission of the capsule so commonly required after the use of the cystitome for tearing the capsule.

In less than 3 per cent. of my operations during the past fifteen years, and they number hundreds, have I been obliged to cut the capsule some weeks or months after the extraction. For many years previous to this period, discissions of the capsule were as frequent in my practice as they are in that of other oculists.

This second case, gentlemen, is aged 68 years. Her cataracts are of clear, brownish hue, what we call sclerosed lenses. The appearance might lead one to think they are not ripe, but, if I mistake not, the one we operate on will escape quite easily. The operation on her left eye is a perfect counterpart of the operation just made on the first case, and the treatment is the same. We will not remove the dressings for three or four days unless pain or discomfort points to something amiss.

The "bête noir" of simple extraction is prolapse of the iris, and many of my friends among the most experienced and best operators still prefer the combined extraction, i. e., extraction with iridectomy. As you know, I prefer the simple operation, though there are many cases in which removal of a segment of the iris must be made; and this is the operation I will now make in these two eyes.

These cataracts are soft; one is shrunken, while the other is decidedly swollen. They are what we call secondary cataracts, being due to some intra-ocular trouble. Capsular opacities which occur after extraction are also called secondary cataracts.

This young man consulted me last May, at which time there was a cataract of two years' standing in his left eye. He had been told there was a detachment of the retina and hæmorrhagic retinitis in his left eye. When I first saw him the lens of the right eye was clear, there was a mild retino-choroiditis, and a few floating bodies in the vitreous. Vision was about 15-50. There was no kidney lesion—and no history of masturbation. He is 28 years old, a farmer, and unmarried. He was sent home, placed in a darkened room, and given an alterative tonic. He improved very much till a few weeks ago his vision became blurred, and the blurring increased rapidly. There is good perception of light in each eye. Tension is normal. As iridectomy seemingly has a happy influence on the nutrition of the eye, I shall make the combined linear extraction, using a large keratome (triangular knife) for making the corneal incision. A piece of iris is withdrawn and snipped off and a portion of the anterior capsule of the lens is removed with the capsule forceps, and the lenses are easily coaxed out. The same dressing and after treatment as in the other cases will be followed, except the use of morphia.

Our next case, gentlemen, is a child three years of age, who has congenital entropion of both under eyelids. You notice clubbed appearances of the lids, and the apparent absence of the eyelashes, also the widening of the palpebral opening. There is a little photophobia and slight irritation of the conjunctiva. There is also a little eczema of the skin, due to the overflow of tears. Slight pressure downwards on the lids brings the cilia into the normal position. Chloroform is administered and I first remove a narrow elliptical strip of the skin the full length of the lids, and then remove a corresponding strip of the orbicularis muscle. Three deeply placed stitches now draw the lids into a normal position, and a collodion dressing maintains and protects them while healing. You will see these cases from time to time and note the results.

32 Adams Avenue west.

The long standing feud in New York state medical circles is aproaching a definite solution, owing to the adoption of up-to-date "Principles of Medical Ethics" by the American Medical Association Committees representing both the N. Y State Medical Society and the N. Y. State Medical Association are now working harmoniously together to accomplish the amalgamation of the two organizations. Nothing but good can result from the union and the subsequent adoption of the national reorganization plan.

BUSINESS METHODS.

An Informal Discussion before the Detroit Academy of Medicine, October 27, 1903.

Dr. David Inglis: Every man must form his own method of note-taking. As regards the advisability of note-taking, it seems to me almost a necessity. I remember very well that in the olden days before I took notes, I was a hypocrite; I pretended to remember all about what I had done for patients and what had happened six weeks or two months before. As a matter of fact, I do not believe that a man who is engaged in general practice can by any possibility keep clearly in his mind all that he does in regard to a particular case. I refer to those cases where the patients come to the office only occasionally, or are not seen often enough so that the doctor can easily and safely keep the run of the case, with any right conception of it. My own experience led me to take notes largely for this: That I frequently had to go into court, in nervous cases, and testify as to the condition of the patient, and to do so with some memory of how the patient was two or three years ago was difficult; this made me an easy victim of the lawyers. As soon as I began to take notes, I found I was master of the situation. When I first began I was in general practice, which means that I was going from house to house, writing prescriptions, and I formed the habit first, of keeping carbon copies of all prescriptions, dating them—and that plays no unimportant part in the notes of the case. I found then that the best way to keep notes of a case was to make a record of it, filing therewith the copies of prescriptions, by getting a heavy manilla paper and having it folded three times—long enough to take in an ordinary sheet, putting inside the notes of the case and all the copies of prescriptions, and writing the patient's name on the back. All my correspondence and papers in regard to the case went into that wrapper and were filed away. After a man gets into special work, however, as for instance a surgeon or specialist of any kind, he wants to keep notes, but he has little occasion to keep memoranda or all copies of prescriptions, as he does not write many of them. For such a purpose as that, I believe the plan of keeping an indexed book will do, although in a book you are bound to copy everything. I want to say something about the matter of having a regular printed form. Dr. Hitchcock will show you a form which he and I got up together. This we thought was a beauty, but I soon threw the whole business into a waste basket. As a matter of fact, I think a closely detailed schedule in which you say, "Yes," "No," etc., is utterly unpractical, and now I have no printed form at all, but write the history like a story. If my experience in the matter of detailed and carefully planned out form is any good, it would be that you are wasting money on the printer in getting it out. There is this great advantage in keeping these notes, that as the patient comes in you look over your notes and can at once begin to question him, showing that you have the case in mind, and it has a great moral effect upon the patient. He thinks, "Now, here is a doctor that understands my case." Sometimes the patient comes back after a long interval and you give an account as he was four years ago and he begins to find that you know more about it than he does.

I lost a good Jefferson Avenue patient through taking notes of her case, however, as she thought that I did not take any interest in the case because I simply wrote it down on paper. Generally, I believe, however, patients are favorably impressed by this procedure.

As regards bookkeeping, I will leave the matter to those who have perhaps a more adequate system than I have. However, I will say that I believe that the physician ought to keep his bills posted up as well as a butcher, dry goods man or

grocer, and render them the first of every month in the same way that the grocer renders a bill to him. I have been doing that for a long time. I well remember my father and the way he did. When it came the first of January I had his accounts all written up and indexed, and all father had to do was to run down that index and fill in one column with the amount. I used to hound my father every day for about two weeks, when finally he would get mad and say: "Give me the book," and he would sit down and fill in that column. Once a year was the time we sent bills; the rest of the year there was a gradual accumulation of grocers' and other bills. However, when father died, as I did not have any money, I could not wait a year, so I began sending my bills once in six months. When my patients came to me and said: "You are in an awful hurry for your money," I made up my mind that if that was a great hurry I would give them something to cry for. Afterwards I sent them once in three months; then, when they kicked on that I started sending them every every month—and have been sending them every month for a great many years. I am satisfied that this is a great deal better.

Dr. F. W. Robbins: I have found in keeping notes of a great many simple cases that have very little permanent value, that it lumbers up our shelves, note-books, etc., without any proper recompense, so that it has been my system to keep full notes on only my special work, that is, on every genito-urinary and surgical case, in an index book—the first visit perhaps requiring a history that takes about a third of a page, and subsequent visits taking up perhaps only a line or two. I have found this quite satisfactory, although it seems more scientific to use the card index for note keeping. I find my notes very valuable from a scientific standpoint, and also from the fact that people are impressed with the idea that you are doing your work well on seeing that the notes are taken, and when they come back after months or years of absence they are pleased to see that you know so much about the history of their case. There is this, however, in my line particularly: I am once in a while questioned as to what will become of these note-books. A great many patients do not like to feel that there are records anywhere of their genito-urinary condition. However, I have not found that to be a great disadvantage. As for the bookkeeping, there has been a great deal said among the profession generally about the laxness of physicians' business methods. I am not so sure whether this is true or not. I am inclined to think that a great many more physicians do live up to business methods than are given credit for it in the occasional words that are spoken before the societies in one place and another.

Instead of charging everybody alike for similar service, I charge the individual what I think he ought to pay. Most of my calls I charge $2.00 for, but once in a while I find a patient who ought to pay only $1.50; once in a while one who cannot pay that. These people I do not charge on the books $2.00 and then give them a discount of a dollar. My books are posted every month, but to patients whom I have on my books continually I only send a bill once in three months. Special cases receive their bills every month or immediately after the service is rendered. I have been accustomed to use, for many years, the Leonard system of bookkeeping. The first entry I put down in the day-book is cash for patients that come into the office and pay cash, and at the end of the month the daily cash is simply carried out as one name in the day-book. All other names go in a similar way, and at the end of the month that book is posted up and entered on the ledger, so that on the morning of the first of the month the girl can send out the bills if it is the time to send them. In the back of the book are several pages given up to miscellaneous accounts, which I use as a cash book; simply the names of the individuals paying accounts and the cash receipts of the month. At the end of every month I foot up the total business done in that month, including the casual cash that was in the day-book. The cash receipts in that month are put down opposite that. The cash receipts

are on one line, month after month, and year after year, so that I continually know what my collections have been at such a month of the year. I find that it takes very little time, done systematically in that way. Of course those who come as charity patients are not entered on my books at all.

Dr. George Duffield: I had some rubber stamps made, some years ago, that when I am reporting a case that concerns the lungs, heart or anything of that sort can be stamped on the back of the case history, and whatever is the matter can be jotted in with a lead pencil after the stamp has been put on the notes. This I find a very convenient way of making a direct report of my cases and keeping track of them. Then I have a little card index, kept in a file, and any cases that may have special interest I usually jot down their family and personal history and copy that on these cards, adding on the back, from time to time, any point that may come up. In cases of urinary analysis I have kept for a number of years histories of my urinary examinations, giving the name, date, the chemical, microscopical and quantitative analyses of the urine such as I may make in the office. These are very satisfactory, because where there is a case of nephritis or albuminuria of pregnancy the record of the care of the case is very satisfactory. I have many such cases on file now that are exceedingly interesting. For bedside work I use pocket charts, which are very satisfactory as far as keeping the temperature is concerned. One of the features that I like most is the rubber stamp, which gives in detail what you want to know.

Dr. B. R. Shurly: I use the simple means of a weekly call-slip and a ledger. At the end of each week I have the sum total of business and collections entered into the ledger and that is all the bookkeeping there is. This long slip upon which I jot down everything for the week is filed in a book, so that at the end of the year I have a complete file of everything that has taken place from day to day. As far as the recording of cases is concerned, I have a careful record of all my intubation cases, which are filed in detail. Nose, throat and chest cases are the only ones which I keep track of, and follow the same system as that of Dr. E. L. Shurly, who has a history blank on which is printed a diagram of the nose and larynx and the side and front views of the chest. Then, by making out the history blank, together with the diagram on the back, we have a complete record of every case that is ever seen, and the prescriptions are simply pasted on this history blank and everything filed away with the index. I use an ordinary slip and ledger, and no cash book at all.

Dr. Johann Flintermann: I keep a day-book in which I put every charge, also a card ledger system, making out charges of every case and filing these cards away, also a cash book, so that I know exactly what my receipts are. As far as recording of cases is concerned, I find that the most difficult part. For one having quite a number of cases, it must be pretty hard to make a good record of each one, owing to the lack of time. No record is of any value that is not carefully taken. I have no system. I usually make a record of the case when I believe it is necessary, or an important case. In reference to cases of which Dr. Inglis spoke, for instance epilepsy, I give the people a kind of a card and ask them to put down the time of every attack, how frequent, and how the attack has been, whether the patient was unconscious, whether he bit his tongue or not. I saw such a card in the clinic of Weir Mitchell in Philadelphia, and copied it. I have not, so far, been satisfied with the way I keep my record

Dr. J. E. Emerson: I studied in a physician's office, where one of my particular duties was to decipher the hieroglyphics that he put on his day-book. The doctor collected when he felt like it, and when he did not feel like it he did not send out his bills. Sometimes they ran a year and sometimes several years. I keep a little note-book in which I put down every visit and the nature of the service, and from that book it is transferred to a ledger, the charge coming out fully in the ledger. I generally send out my bills once a month. As for keeping notes, I always made a habit of keeping notes, but I keep them in a book. I have

tried printed forms and never could make them work. Somehow it always went against my grain, and the story I wanted to write did not fit a printed form. At the office I have a book in which I make a careful history of the case when it comes to me. It is amusing to note the different effects of taking notes on different patients. Most patients are pleased, but sometimes one asks:

"What are you taking those notes for?"

"So that I can remember the facts of the case."

When he objects to this, I say, "Very well, if I cannot have it my own way, we will have to part company at once. If you have not confidence enough in my making practical use of the notes, then you have not confidence enough in me for my services at all; you may as well go now and get out;" but the patient usually stays. I always keep a copy of every prescription blank, with carbon paper. I tie all the prescriptions given in one year together, but I find that a great number of them I never refer to. A man cannot carry a number of prescriptions in his head from day to day. Once in a while someone will come in, as a lady did a few days ago, who said: "I came to see you a good while ago and you treated me and I got better; and now I need something again and come back to you." It was about 12 years ago, and she thought I remembered all about it. It constantly occurs that patients expect us to remember the date of the last visit and everything that has occurred and all about it, without their being able to remember the first thing. I sometimes feel, I confess that the less machinery I had the better if I could only get some way to remember everything.

Dr. R. W. Gillman: For the last three years I have been keeping a financial record of my cases by using the card system. It is a card that Dr. Thaddeus Walker got up three years ago and combines a ledger and journal together. We may have a patient come this month, and then not again for five years, and this card will answer all purposes. All you need is simply a cash book with it, although a cash book may be dispensed with. On the card you can write the year and then the month underneath. It is divided into thirty-one days, and there is a line dividing the days in two, so to speak, so that there is a space for credits and debits. If you make a charge of $3.00 or $20.00 and the patient pays something, you put your charge on the line and what he pays on another, which has always a date at the top of the space, so that you can tell at a glance what you charged and what he has paid, and when. I think the useful part of this system is that it is so simple that you have at one glance right before you a financial record covering months or years. You can see how much he owes you and what he paid and how he stands. In this system you do not have to post the ledger and keep a journal as in the Leonard system. You can also, if you like, distinguish your calls from office visits by using different colored inks. I have lost considerable money by forgetting, after the day's work was done, just who had been treated. I think I have lost more money that way than in any other way. Now, my office girl, if she does not know the name of the patient, goes up to him and says: "Give me your name" (at the same time handing him a card on which to write it), "and I will let the doctor know you are waiting.' It pleases the patient, and also serves me as a record that the man called that day. The girl takes the card and walks into my office and leaves it. At the end of the day I have a bunch of these cards, and fill them out with the sum of money that the patient owes me. The girl will, the next morning, take these cards and post them. Even if it is a peddler, I get his name. To poor patients I make one uniform charge for my work, and I keep on charging them the full price, so to speak, on my record; then when I come to send the bill and find that it is $40 and I think they should not pay over half, I make it $20.00. This helps me out later, perhaps, if one of their richer friends comes and says: "You only charged so and so $20.00 and you want to charge me $40.00." In recording cases I believe that perhaps a little printing is a good thing. I do not believe in having a whole medical book on a card; only a few leading remarks, the name and address and the age of the patient, with the general his-

tory, what the patient complains of and the ear and eye examinations.

Dr. H. E. Safford: About two years ago, I went around to several of my friends and got together all the forms they had, and finally came to this one as being the sum total of all that seemed to me useful. I believe the marked feature of my system that did not present itself in the others to my satisfaction is that of elasticity. The thing that seems to me necessary is to have fitting forms. I use altogether about seven. The first one is my history. This is used at the first visit. The next is the continuation, if a physical examination has been made. The next is the story of treatment. The next is any laboratory examination you may wish to make; this forms a chart which seems to me to be as compact for a pocket chart as any that I am familiar with. I have what I call my supplementary sheet, which is blank, with places for dating and numbering. There is no more lumber about it than necessary and all particulars are provided for.

Dr. C. W. Hitchcock: I have been using a four-page form, although it has too much in the way of printing on it. The printing is suggestive, but I do not think it is all necessary. The headings are good, and therein lies the value in printed forms, that they get you in the way of taking a systematic history. If you have your history simply in a blank book and take it from the patient as he gives it, he tells you one thing and then goes off on to something else, which makes it disconnected and unsystematic. Therein lies the advantage of some printed form, that under some printed heading you may record what belongs there. The first two pages only have printing on; the last pages are used to form notes and treatment. As to bookkeeping, I have only this suggestion—a card. It can be used for both journal and ledger, although I do not use it so because I want a summary of the month's business, so I use a Leonard's day book and the footings at the end of the month I post upon the cards, which are alphabetically filed.

Dr. W. F. Metcalf: For several years I have kept records according to printed form, having a simple folder in which I keep the records and use the printed form which Dr. Safford has showed you. I find it very satisfactory, because I have it always with me and I do not wish to hear the patient's story; it takes too much time. I can get all the facts and put them down in abbreviation while I am talking to her. When I am through I ask her if there is any important fact that I should note. As a rule there is nothing. I find it a very practical plan. Occasionally I omit taking a history, but not often. I have been filling out a surgical sheet until recently, but the interne of the hospital fills out this sheet now. There are two important advantages in that. On the first sheet, after I have taken the history, I put down diagnosis, prognosis and treatment. Another man sits down after the operation and checks up my diagnosis, which makes me more careful, as it is not very creditable to make many errors in diagnosis. The subsequent history, the other sheet, temperature chart and laboratory findings, are filled out by another person, and I like it because it takes so little of my time. I have found only one patient objecting to my taking history. She came back afterwards and said she did not wish the notes kept.

Dr. W. P. Manton: I have been in the habit of keeping very careful notes for many years. I have separate notes for office, hospital and clinic cases, etc., also a note-book for obstetrical cases. I do not think that the numerous systems that have been advised here tonight would suit me at all. I have been accustomed for many years to use a stamp, and a quick way, and I do not think that any of these methods would be better than my own system. I have kept pretty careful notes for the past twenty-five years, even during my student days. I think the simpler the method the better.

Dr. F. B. Tibbals: I have never kept any accurate record of my cases in general, except my surgical cases, and the reason I have not done so is that it has always seemed to me that it occupied a great deal of time to keep complete records of all your cases, when one never can tell which cases will be important from the first conference. A patient comes to your office appearing to have a trifling cold, which subsequently develops into pneumonia. You might not start your record with the trifling case

and would not have the notes of it. I remember well one patient coming to me, saying that he had seen a great many physicians all over the country and never found but one man who gave him anything that helped him, and that was a doctor in a country town who mixed up something in his office that relieved him completely, but the same doctor never could duplicate the prescription. I have kept carbon copies of my prescriptions and can usually find them if I want them some years later. My bookkeeping is exceedingly simple. I use either a pad or one of the commercial date-books which are given us to jot down the little incidents of the day at the time they happen. I start in the morning by writing down my calls and add other charges during the day. As a patient comes into the office I put it down and at my convenience transfer the day's work to a Leonard day-book, but I keep a separate cash book for each month, and of course for each year, so that I can always tell just how much money I am collecting. I use the back part of the day book for the little miscellaneous accounts. My ledger is a card system, which, to my mind, is the simplest and most convenient way of keeping a ledger. I take out a bad account (my case having two compartments, the front one containing the live accounts and the back compartment those in the hands of collectors). When I give a live account to a collector I simply move it over to the back part of the case. A small card, much like the one Dr. Hitchcock uses, unless there are charges made month by month, is good for two or three years in the running account, and to me it is an ideal system.

A recent opinion handed down by Judge Haight, of the Court of Appeals of New York state, is of interest to those who believe that parents are not justified in leaving their children to the "care" of "faith curers." In the case of the People vs. Pierson, the defendant was fined $500 or 500 days' imprisonment for criminal neglect in failing to provide a licensed physician to attend his 16-months old daughter in a case of bronchial pneumonia, which terminated fatally for the infant. The conviction was secured under the penal code, which provides that "a person who omits without lawful excuse to perform a duty by law imposed upon him, to furnish food, clothing, shelter or medical attendance to a minor, is guilty," etc. The Justice before whom the case was tried, early in 1901, held that "medical attendance" referred to in the statute does not mean exclusively the attendance of a medical practitioner in the general sense of the term. The apellate division of the court reversed this holding.

In his opinion, Judge Haight says:

"It would seem that the legislative intent is reasonably clear, although possibly more precise language could have been employed. The section of the code under which the indictment was found contemplates that there are persons upon whom the law casts a duty of caring for minors. We are aware that there are people who believe that the divine power may be invoked to heal the sick, and faith is all that is required. There are others who believe that the Creator has supplied the earth, nature's storehouse, with everything that man may want for his support and maintenance' including the restoration and preservation of his health, and that he is left to work out his own salvation under fixed natural laws. There are still others who believe Christianity and science go hand in hand, both proceeding from the Creator, that science is but the agent of the Almighty, through which he accomplishes results, and that both science and divine power may be invoked together to restore diseased and suffering humanity. But, sitting as a court of law for the purpose of construing and determining the meaning of statutes, we have nothing to do with variances in religious belief, and have no power to determine which is correct. We place no limitation upon the power of the mind over the body, the power of faith to dispel disease, or the power of the Supreme Being to heal the sick. We merely declare the law as given us by the legislature. We find no error on the part of the trial court that called for reversal."

DETROIT MEDICAL JOURNAL

A MONTHLY EPITOME OF
PRACTICE AND THERAPEUTICS

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The Field of the State Journals.

One of the results of the reorganization of the profession, now well under way in most of the states, has been the publication of Journals by a number of the State Medical Societies. Kentucky, Michigan, California, New York and Illinois now publish monthly Journals; Colorado has the project under way, and Pennsylvania and several other states use private Journals as official organs instead of publishing a Journal of their own. These various State Journals take the place of the Annual Transactions of the respective societies, publish current news from the component County Societies, and should do much to keep the individual members interested and active.

They are handicapped by the obligation to publish all the proceedings of the annual meeting, whereas we all know that some papers are read which are of little interest or value, while really good matter is of necessity crowded out to make room for other material.

The *Illinois Medical Journal* sums up the matter by saying:

"Such a Journal should publish the transactions of the State Society and of the affiliated local societies and should keep its readers informed as to what is going on in the state societies of neighboring states. It should keep the profession of the State fully informed as to the doings of the Board of Health and Board of Examiners, state institutions, and all other medical or semi-medical institutions in its state. Local health conditions throughout the State are a source of constant interest, and each official reporter and health officer should furnish the Journal full and reliable reports on health matters. New hospitals have sprung up in every part of the State in which advanced medical and surgical work is being done, of which the profession knows little. The State Journal is the natural avenue of inter-communication. With an official reporter in each county it should keep the profession thoroughly informed of all the matters in the State of interest to the profession."

The field is, we think, a worthy one, making the county and the state society of more direct value to the individual physician, and serving as a valuable means of interchange of local medical thought and news. It should, by giving the members some tangible return for the annual dues, aid materially in increasing the membership.

Business Methods.

The informal discussion upon this topic presented in another column has the merit of being practical. To our mind, the busy medical man needs just such timely suggestions regarding the recordinging of his cases and the keeping and collecting of his accounts. It matters little in what form cases are recorded, so long as the recording is not so burdensome as to be avoided altogether; but working records should be kept in all important cases.

The patient is benefited by these notes from which his physician may refresh his by no means infallible memory, and

usually feels pleased to observe this special interest taken in his, to him at least, important case. To the specialist as the oculist, alienist, or surgeon, such case-records are absolutely essential, but any practitioner who aspires to be more than an automaton will find the same attention to details fully worth while. A card system is the simplest, and most easy of reference.

Regarding the keeping and rendering of accounts, the physician should be business-like, adopting a system as simple and concise as possible. The usual day-books with a card ledger system answer well, although cards can be obtained ruled for daily as well as monthly charges. All accounts should be kept so as to show what service was rendered, in order that the patient may at any time be shown the items and also that another besides the doctor himself may render and collect the accounts, should it become necessary.

The profession is gradually learning to pay some attention to the business side of the practice of medicine, and while some may deplore the passing of the idea that the physician is purely a humanitarian, we believe he is justified in considering the material interests of himself and family as in no way conflicting with his duty to his patient. He should render bills promptly, proportioned to the circumstances of the patient, and insist upon prompt payment. He will find his services more highly valued thereby, because people value lightly what costs nothing. The familiar spectacle of the busy physician who leaves his family in want after he is gone is, we hope, to become a thing of the past. Outside of our profession most "Bread cast upon the waters" has a hook and line attached Why should we be the only fishermen to furnish free bait?

EDITORIAL NOTES

The Mississippi Valley Medical Association held its annual meeting at Memphis October 7-9, with about the usual attendance, enjoyed much Southern hospitality and elected the following officers: President, Hugh T. Patrick, M. D., Chicago, Ill.; first vice-president, Bransford Lewis, M. D., St. Louis, Mo.; second vice-president, George W. Cole, Jr., M. D., Springfield, Mo.; treasurer, Thos. Hunt Stucky, M. D., Louisville, Ky.; secretary, Henry Enos Tuley, M. D., Louisville, Ky.; assistant secretary, S. C. Stanton, M. D., Chicago, Ill.

In view of the fact that over 400 deaths from tetanus resulted from the last 4th of July celebration, the Association adopted resolutions recommending the following preventive measures:

1. Enforcement of existing laws regarding the sale of Toy Pistols and other dangerous toys.
2. Enactment of laws by the nation, states and municipalities prohibiting the manufacture and sale of Toy Pistols, Blank Cartridges, Dynamite Canes and Caps, Cannon Crackers, etc.
3. Open treatment of all wounds, however insignificant, in which from the nature or environment there is any risk of tetanus.
4. Immediate use of tetanus antitoxin in all cases of Fourth-of-July wounds, or wounds received in barnyards, gardens, or other places where tetanus infection is likely to occur.
5. As a forlorn hope, the injection of tetanus antitoxin after tetanus symptoms have appeared.

At the annual meeting of the Detroit Academy of Medicine, held October 13, 1903, thirty-eight members and guests enjoyed the hospitality of the retiring president, Dr. Robert Winthrop Gillman, and after a sumptuous dinner at the De-

troit Club, elected the following officers for 1903-1904: President Alvah N. Collins; Vice-President, William F. Metcalf; Secretary-Treasurer, Harrison D. Jenks (re-elected); Trustee, Arthur H. Bigg, Dr. Gillman's presidential address, dealing with "The Physician as a Business Man," pointed out some wholesome truths, regarding "A gullible profession," and was well received.

The American Association of Obstetricians and Gynæcologists held its annual meeting in Chicago September 22 to 24 last. Dr. Walter P. Manton, of Detroit, contributed a paper on "Appendicitis," Dr. H. W. Longyear, of Detroit, one on "Shortening the Round Ligaments by the Blunt Hook Method," and Dr. E. T. Abrams, of Dollar Bay, Mich., one on "Placenta Prævia."

Dr. Maurice Fisher Pilgrim, formerly of Washington, D. C., and lately of New York City, died in the latter place the last part of October. Pneumonia was the immediate cause of his death. Dr. Fisher was born at Cohansey, N. J., and first came to the national capital as a newspaper correspondent for a New York paper; later he was a stenographer in the United States senate, and he finally associated himself with the treasury department. While still in the governmental service he studied medicine, and was graduated from Howard University in 1884. After a short time he resigned from the service of the government, and went to New York for a special course in eye and ear work, in the practice of which he was eminently successful. Dr. Pilgrim was well known to the profession as a writer of ability. He was the author of several books on medical topics, and in addition to this was vice-president of the American Electro-Therapeutic Association, professor of psychiatry in the New York School of Physical Therapeutics and associate editor of the Journal of Advanced Therapeutics.

The members of the medical corps of the navy, through Surgeon General Rixey, have expressed to the department of the navy their dissatisfaction at the present status of their official titles. Surgeon General Rixey's communication suggests that men holding rank in the several grades of the corps be given titles as follows: In place of surgeon general, surgeon admiral; medical director, surgeon captain; medical inspector, surgeon commander; surgeon, surgeon lieutenant commander; and so on. We trust that in the event of the wishes of the corps being carried out by the department, there will be no emergency call for the "surgeon lieutenant commander." The length of time necessary to enunciate the title would mean much to the patient. What a mouthful it is!

A monument to the late Dr. Charcot has been erected at Lamoulou-les-bains by the French Medical Society. The erection of this monument is the culmination of a long-cherished desire on the part of the medical profession of France to do honor to the memory of one of the greatest authorities on nervous diseases.

The number of medical students in the United States for the last college year was 27,615. Of this number, 24,930 were at the regular schools, 1,498 at the homeopathic, 848 at the eclectic and 339 at the physio-medical and nondescript schools. Germany, with more than two-thirds the population of the United States, has less than one-third as many students of medicine.

At the annual public session of the French Academy, held on October 26 last, President Perrot announced that the special prize of $20,000 had been awarded to Dr. Emile Roux, who succeeded Pasteur on the latter's death. Dr. Roux accepted the money with the stipulation that it should be used in carrying out the scientific investigations of the Institut Pasteur.

Professor Llewellyn F. Barker, head of the department of anatomy at the University of Chicago, has gone abroad for a year to study the methods of research and the equipment of the medical institutions of Europe. The trip has for its object the perfection of the plans for the extension of Rush Medical College. In the absence of Prof. Barker the department of anatomy will be in charge of Assistant Professor Bensley.

New Instruments & Devices

Mention of new instruments and devices in this department is entirely complimentary and articles illustrated are judged on their merits.

We invite manufacturers and physicians to send us matter suitable for publication under this head. A description of the device and an electrotype or half-tone with a base not greater than two and five-eighths inches should be sent.

Always mention the price of the article in question.

The management cannot undertake to return cuts unless postage for same accompanies the letter with which they are sent.

PUS BASIN.

This particular style of the pus basin which forms so necessary an adjunct to the work of the surgeon, is made with a ⅞ inch rim of soft brass, covered with

rubber. The body of the basin is made of strong, pure gum, securely connected with the rim. The advantage of this plan may readily be seen. The soft rim may readily be pressed into any required form. and will retain its shape while the basin is being applied to any portion of the body necessary. The rubber covering of the rim is sufficiently thick and soft to make so close a contact that no fluid passes between the skin and the basin. Another advantage of this form is that it may be folded into a very small compass for transportation.

The basins come in two sizes, 6-inch and 8-inch, and they retail for $1.50 and $1.75 apiece, respectively.

MONOSMITH NASAL SPECULUM.

This speculum, devised by Dr. O. B. Monosmith, meets all the requirements of such an instrument, both for diagnostic and operative work. It is designed for holding in the left hand, with the thumb

on the screw-head shown. This grip ensures a firm hold of the instrument, without the necessity for opening the blades until it is desired to do so. When the instrument is held in this manner and the handles pressed together, the blades open vertically. This plane of action raises the tip of the nose and gives a more advantageous angle for illumination and consequent view of the nasal cavities

The cut shows the instrument two-thirds of its full size. It is strongly made and the shape of the blades has been designed with care for the purpose to which the instrument is intended to be put when in use.

The workmanship and material are excellent, and the speculum retails for $1.25.

RICHARDS' SURGICAL CUSHION.

This obstetrical pad, the invention of Dr. W. P. Richards, has had the hearty approval of the members of the profession

Patented Feb. 18, 1902.
Dr. W. P. RICHARDS, Inventor.
CAVOL RUBBER CO.

who have had an opportunity to test its many advantages. Its form is such that it answers several different purposes equally well, and it will be found a most convenient part of the equipment of the physician and surgeon. It will be found equally valuable as an obstetrical pad, a surgical pad, a douche pan or a bed pan, all combined in one form. The yard of detachable rubber tubing which comes with the cushion is easily removed and a metal cap may be attached, when the cushion is in perfect condition for use as a douche or bed pan.

It is made of the best quality of maroon colored rubber, and its outside measurement is 22 inches. The cost of the cushion complete is $6.50.

The annual session of the American Public Health Asssociation was held in Washington, D. C., on October 26 to 30, inclusive. It was the thirty-first occasion of the kind, and delegates representing the United States, Canada, Mexico and Cuba were in attendance on the deliberations of the organization. Among other acts of interest was the passage of a resolution calling upon Congress to re-establish the canteen, in the interests of the health of the enlisted men of the army, and one calling upon medical colleges to make provision for the clinical instruction of their students in the diagnosis of all the infectious diseases common in the United States. Officers were elected as follows: President, Dr. Carlos T. Finley, Havana, Cuba; first vice-president, Dr. J. R. Monjaras, Mexico; second vice-president, Dr. William C. Woodward, Washington; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn. The next annual meeting will be held in Cuba.

Harper Hospital (Detroit) is now using its new operating rooms, which have been under construction for the past year. The entire building is on modern aseptic lines, costing nearly $75,000, and offers surgical advantages inferior to those of almost no hospital in the country. The building, linked by corridors to the main hospital, contains a large amphitheatre, and four private operating rooms, with separate rooms for anæsthesia, dressings and other essentials, and quarters for the internes on the first floor. The operator finds his comfort enhanced by toilet and bath rooms galore. Through the generosity of some members of the staff, much of the equipment in the smaller operating rooms is entirely new, some of it being especially designed for this hospital.

Dr. E. B. Smith, of Detroit, was welcomed home from Europe, where he spent several profitable months, by some forty brother practitioners and friends. The occasion took the form of the customary dinner.

PROGRESS OF MEDICAL SCIENCE

Hypodermic Administration of Mercury.

Bernart (*Am. Med.* October 31, '03), discussing the treatment of syphilis favors the use of mercury hypodermically as productive of accuracy, secrecy and results without the stomachic disturbance of internal medication or the uncleanly and troublesome publicity of inunctions. Both soluble and insoluble salts are used but the bichloride is preferred by the writer. The injection should be deep into the gluteal muscles with strict antiseptic precautions. The dose should be as large as possible without ptyalism, repeated nearly every day in severe cases, but the toleration of the patient must be carefully gauged, since no fixed doses can be laid down, adapted to all cases. Special care of the mouth, nutritious food, exercise and baths greatly increase the quantity of medicine that may be given. No untoward result is to be expected from the injection, local inflammation and pain being rarely seen. He concludes that the more general adoption of mercurial injections will be productive of the following results:

1. It will control and cure many cases which are intractable.

2. It will place the treatment of syphilis on a more scientific basis.

3. It may be considered absolutely essential in syphilis of the nervous system, still amenable to antisyphilitic treatment.

Urinary Casts.

Emery (*Brooklyn Medical Journal*, October, '03), says that the hyaline cast, the basis of all tube casts, is composed of some proteid derivative formed either of coagulable elements that have transuded into the renal tubules through pathological lesions of the latter or consists of a secretion of the pathologic epithelium lining the tubules or is the direct result of disintegration of the renal cells whose products make casts of the tubules in which they are formed, and appear in the urinary sediment.

Clinically the presence of hyaline casts may denote a passive congestion, an irritable condition of the tubules, or inflammatory involvement of the kidneys.

Small hyaline casts without albumin need not be considered of special significance particularly if few in number, or occuring in patients over 45 years old. When the hyaline cast bears granular material, such as blood or epithelium, it is pathognomomic of renal disease, unless it can be proven that the detritus comes from the ureter or bladder.

Large hyaline casts in the urine of middle-aged men of strenous business habits, if long continued, may be the early sign of interstitial nephritis. If in addition to the above there is a continued trace of albumin, it should excite our suspicion to the point of certainty, especially if the daily output of urea is much diminished.

The Reduction in Infant Mortality in New York.

Freeman (*Medical News*, September 5, 1903), presents a most interesting set of charts and tables, showing that the infant mortality has fallen from 242 to 158 per 100,000 in the last ten years—the average infant mortality in the United States being 159 per 100,000 in 1900, and concludes that:

1. The high infant mortality of all countries is avoidable, as is evidenced by the fact that well cared for infants show a very low rate.

2. As the active cause of the mortality, defective feeding, stands pre-eminent—heat, humidity and bad hygienic conditions are contributory causes.

3. The marked decline in infant mortality in the United States, and especially in New York City, is due for the most part to the decline in mortality from summer diarrhœa.

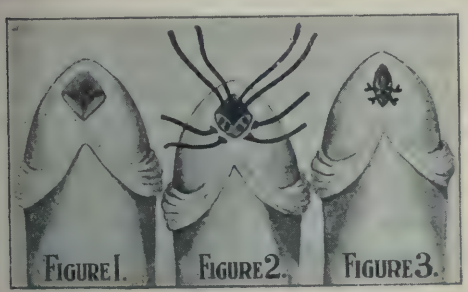
4. This is due primarily to the improvement in the milk supply, and the general adoption of pasteurization, or sterilization of this product.

5. Other agencies in New York City

are the improved city administration, the milk inspection of the department of health, the furnishing of pure milk at less than cost to the poor, the fresh-air work of the St. John Guild and similar associations, cleaner streets and asphalt pavements, the new small parks, play grounds and recreation piers, the improved tenements and the use of diphtheria antitoxin.

Meatotomy.

Lord (*Journal A. M. A.*, October 31, '03), speaks of the unsatisfactory after-care of an incised meatus, in that it is necessary to keep the wound open by sounds. This prolongs the bleeding for days, and inflicts much needless pain with a result often imperfect. Hence he recommends suturing each side of the cut urethral surface with fine catgut to the outer edge of the meatus in such a way as to separate the cut edges, The cut below is explanatory.



Mortality In Appendicitis.

John B. Deaver (*Am. Med.*, October 17, '03), reports 566 cases operated during the year ending September 1, 1903, with a mortality of 5 per cent. He divides his cases into three groups—1. Those of general peritonitis. 2. Those of localized abscess with perforated or necrotic appendix. 3. Those in which the disease was entirely confined to the appendix.

He lost 5 out of 16 cases of general peritonitis by immediate operation (mortality 31 per cent.) and 22 out of 183 cases where absess was found a mortality of 12 per cent.

Despite this large mortality in septic cases, he decries the teaching of some surgeons that such cases are better left alone until convalescent, believing that to trust to peritoneal absorption is uncertain and hazardous and comparable to nothing but "faith cure." In 367 cases in which the lesion was confined to the appendix there were but 3 deaths, a mortality of 0.8 per cent.

He concludes that an early operation is the only rational procedure, and the only treatment which will reduce the mortality to insignificant figures, and that no patient should be permitted to have a second attack, however mild the first.

In the report of Consul-General Richard Guenther, at Frankfort, Germany, regarding the hygienic congress on malaria and tuberculosis, he says:

"Of the resolutions of the International Congress for Hygiene, those referring to the prevention of malaria and tuberculosis are especially important.

"On motion of Mr. Patrick Munson, an English physiologist, the following resolution was passed:

'In recognition of the practical importance of the "mosquito-malaria theory" the congress shall bring pressure upon all governments in malaria districts for the purpose of, first, causing an examination of civil and military officers as to a practical knowledge of this theory before employing them in such localities; second, of compelling the educational establishments in such districts to add instruction concerning the malaria theory and its practical applications; third, to consider officers who know nothing of this theory or who systematically deny its practical application as unfit for service in malaria districts."

"The first and second section of the congress jointly passed the following resolution:

'Human tuberculosis is entirely untransferable from one person to another. At the present state of our knowledge it is still necessary to recommend hygienic measures to prevent the transfer of animal tuberculosis to human beings.'

"The last sentence apparently means that the theory of Professor Koch concerning the difference between tuberculosis in cattle and in men is not yet considered as conclusive by the majority of experts."

BOOK REVIEWS

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. Clifton Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College; Attending Obstetrician to the New York Maternity Hospital. With 1221 Illustrations, Many of which are Printed in Colors. Pages, 1064. Price, Cloth, $7.00, Net. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia, Pa., 1903.

This comprehensive and extended work is divided into ten parts, as follows: The physiology of the female genital organs; physiological pregnancy; pathological pregnancy; physiological labor; pathological labor; physiological puerperium; pathological puerperium; the physiology of the newly born; the pathology of the newly born; obstetric surgery. Following these is an appendix containing a number of private history and institutional records. This arrangement seems eminently logical and practical, and the careful subdivision of each separate part which the author has taken care to make proves a fitting following out of the plan of the work as originally laid out. The wide subject chosen gives a large field to cover, but by means of systematically arranged material, Dr. Edgar has covered it admirably. The most approved of the latest methods of treatment and management are incorporated in the text, which is fully illustrated with good reproductions from photographs. Schematic and diagrammatic drawings aid materially in emphasizing important points, and the illustrations are to be highly commended, as much for their profusion as for their real assistance to the reader.

The student of medicine can make no mistake in making a careful study of this work; and the old hand may, by means of a carefully arranged index, immediately locate any particular point on which he wishes to brush up his knowledge. There is real solid worth in the book, and it has been put in as attractive and convenient form as could well be designed by the most competent publisher. Among the numerous works on obstetrics we can conscientiously recommend the one under discussion as being thoroughly well suited to the needs of any who seek after exact and full knowledge on this important subject.

Practically all aspects of obstetrics are considered, including the legal side of the part a physician has to play in connection with the birth of children. As the title of the work indicates, it is thoroughly practical, and, withal, thoroughly modprehensive. It should be well received by the profession, and we have little doubt that it will be.

Functional Diagnosis of Kidney Disease, with Especial Reference to Renal Surgery. Clinical Experimental Investigations by Dr. Leopold Casper (Privatdocent an der Universitaet) and Dr. Paul Friederich Richter (Assistent der III. Med. Klinik), in Berlin. Translated by Dr. Robert C. Bryan, Adjunt Prof. Genito-Urinary Diseases, University Med. College, Richmond, Va., and Dr. Henry L. Sanford, Resident Surgeon Lakeside Hospital, Cleveland. Pages, 227. Price, Cloth, $1.50, Net. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia. 1903.

The delight with which German physicians enter into research work carries them through the most conscientious and painstaking details, with the result that their labors when published represent the best work. Both Casper and Richter are well known and respected investigators and the late advances in physical chemistry, together with the introduction of ureteral catheterization into medical

practice have opened an attractive field for their work. The translators have done their work with care, recognizing the newly aroused and widespread interest in this important branch of diagnosis in this country. The advantages to patients from a more delicate and a more absolute diagnosis are not to be doubted, and the theories advanced by the German writers have been thoroughly confirmed and established in practice. The chief question in diagnosis of kidney trouble must be whether or not, in the event of the removal of a diseased organ, the other will be able to do the work previously performed by two. The double organ must be treated from both sides; and it is in determining important points in this very matter that the two writers have done their best work .

A number of clinical reports, the best methods of diagnosis, and the results of carefully conducted experiments make up the text, which can scarcely fail to be both important and valuable to the surgeon and the physician alike.

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Especial interest attaches to this number of the series, owing to the continuation of valuable articles on diseases of the gall-bladder and gall-ducts, malaria and other maladies, which have been incorporated in the work without the necessity of giving up the clinical features which have done so much to add to the well deserved popularity of this series. Musser and Deaver contribute valuable material to the literature on gall-stone disease, and Achilles Rose, of New York, takes up the question of carbonic acid treatment in rectal diseases. He reports several cases of rectal fissure cured by carbonic acid gas alone, and outlines the technique of his treatment.

Charles F. Craig, M. D., of the army, whose experiences have given him a valuable field of observation, writes of malarial infection. He takes the opportunity to discredit the use of methylene blue, observing that it is much less valuable than quinin. R. Murray Leslie, of London, makes a report on clinical types of pneumonia, taking special note of aberrant forms, and J. A. Bodine, of New York, contributes a clinical lecture on cocain anæsthesia, with illustrative case—an operation for varicocele. The whole number is interesting and practical, and is well published and edited. The illustrations have been selected with great care and they form a valuable adjunct to the text.

Lea's Series of Medical Epitomes. An Epitome of Inorganic Chemistry and Physics. By A. McGlannan, M. D., of

the College of Physicians and Surgeons, Baltimore. 12mo of 216 Pages, Illustrated with 20 Engravings. Cloth, $1.00, Net. Lea Brothers & Co., Publishers, Philadelphia and New York.

Essentials, and essentials only, are given space in this handy volume of an excellent series. Lack of space cuts out anything that is not entirely pertinent to the subject at hand, but Dr. McGlannan has managed to crowd a great deal of useful and trustworthy matter into the brief limits allotted to his writing. The present volume of the series, like its fellows, provides for quiz work by means of a series of questions after each chapter, touching upon the most vital portions of the text gone over. It should prove a most useful and convenient book for the student in medicine who is desirous of keeping fully up in the subjects included in the text, and for the practitioner who has inclination for modern information, but little time for voluminous reading.

The next volume of the series will be written by the same author on the essentials of organic and physiological chemistry, and we may confidently expect it to be worthy the serious consideration of those interested in these subjects. Like all the Lea publications, the present volume is carefully published, and at the price should meet with a ready sale.

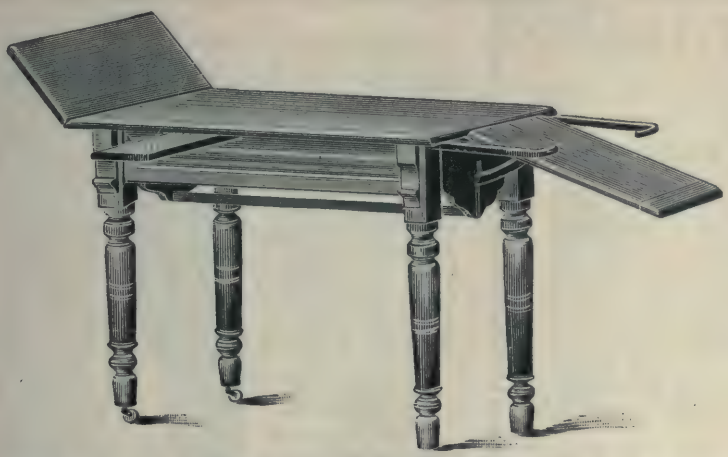
Physician's Pocket Account Book, By J. J. Taylor, M. D. Published by The Medical Council, 4105 Walnut St., Philadelphia, Pa. Pages, 200. Price, Bound in Leather, $1.00.

This book has achieved a well earned popularity with physicians who desire to be methodical in the matter of keeping their accounts, without being bothered by too complex a system. The whole business is confined to one small book, which might readily be carried in a coat pocket, serving as a day book, while the accounts are simply kept in ledger form for ready reference. An index furnishes a very handy guide to all the accounts in the book, and provision is made for keeping track of live accounts brought from one book into another. There is sufficient space left for the entries to admit of their being put in form that will be intelligible to a court, should occasion arise for the necessity of their being shown to a tribunal.

There are departments for accounts of professional services rendered, an obstetric record, a vaccination record, record of deaths and cash account, together with a number of pages that may be devoted to the addresses of nurses and such other memoranda as will readily suggest themselves to the busy practitioner. The price of the book is low and it fully meets the requirements which a publication of this character should.

Members of the British Medical Association, through the secretary of that body, have sent circular letters to the press of Great Britain, deprecating the mention of names of medical men in attendance on persons other than members of the royal family. The 19,000 members of the organization, should be able to wield a powerful influence in this matter, if they will concentrate their efforts. The press is reported to be ready to fall in with the idea.

The lectures given during September and October by the staff of the Detroit Clinical Laboratory on "The Application of Modern Laboratory Methods in Diagnosis," covering the subjects of radiography, hematology, pathology and bacteriology, were well attended and proved of distinct value to men untrained in modern laboratory methods.



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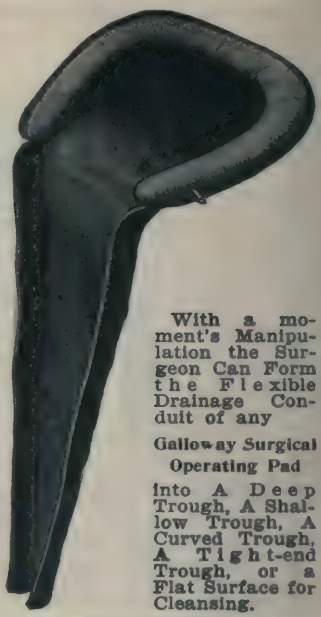

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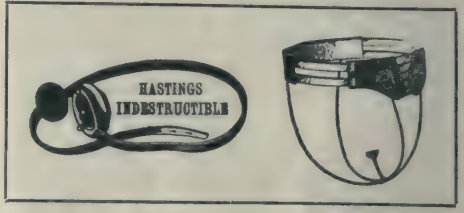

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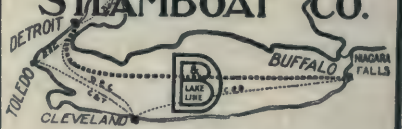

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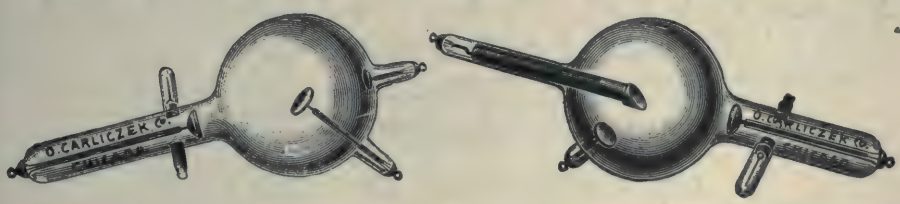

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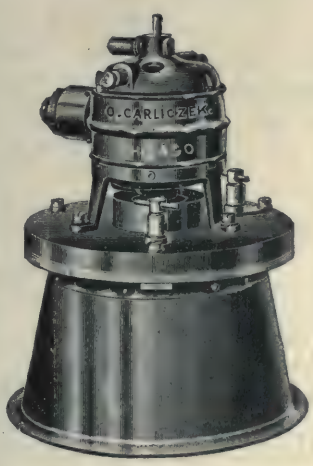

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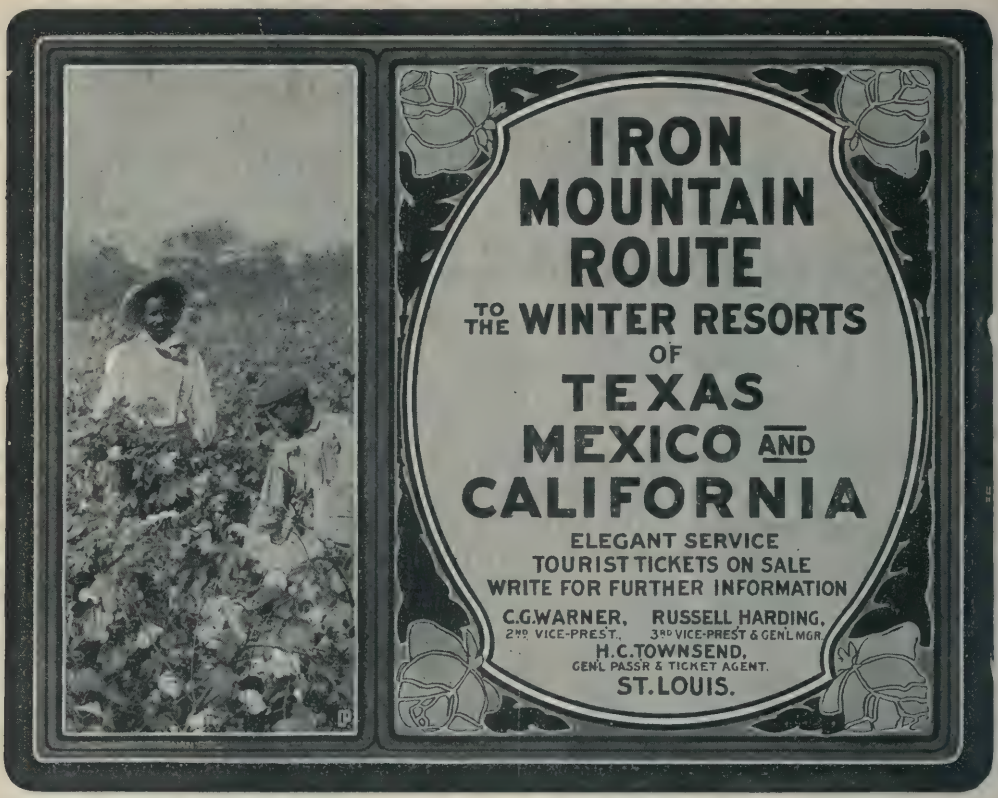

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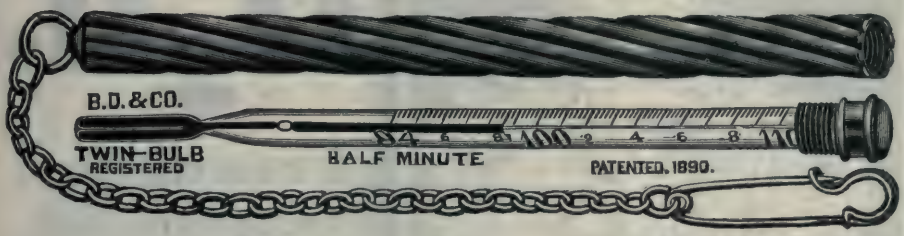

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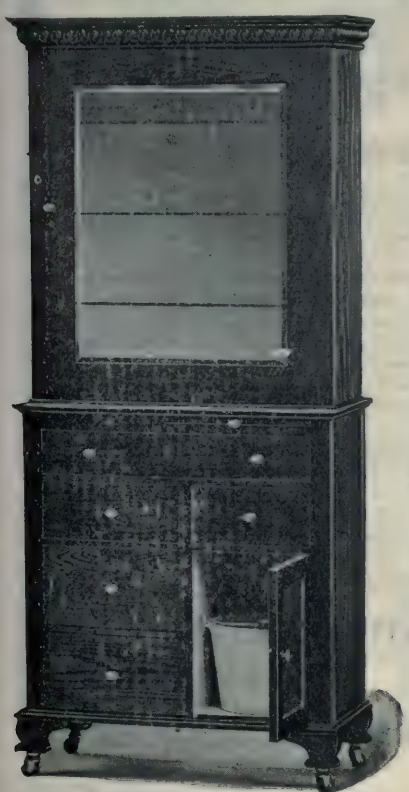

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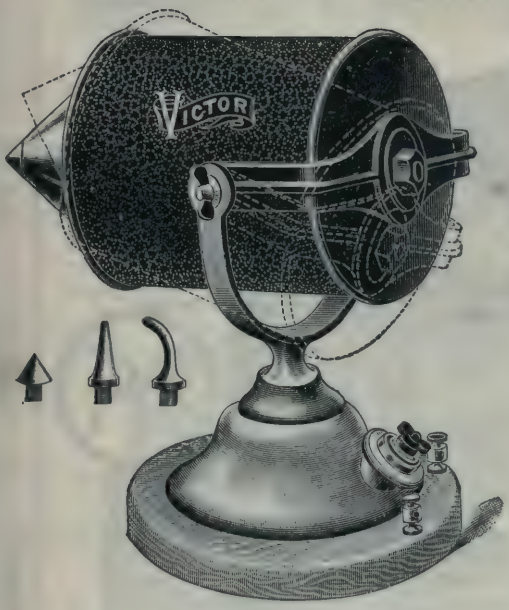

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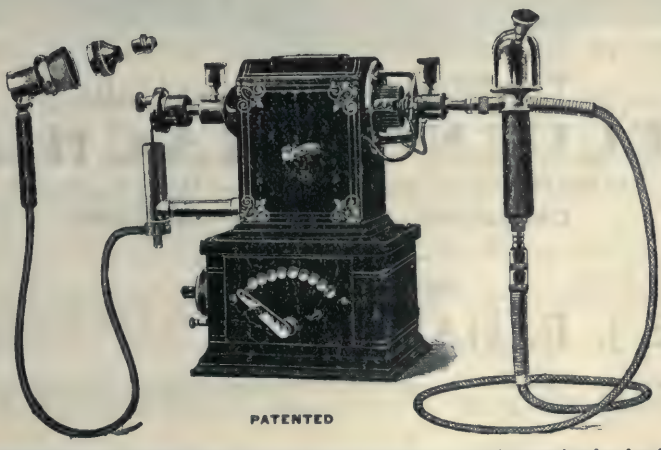

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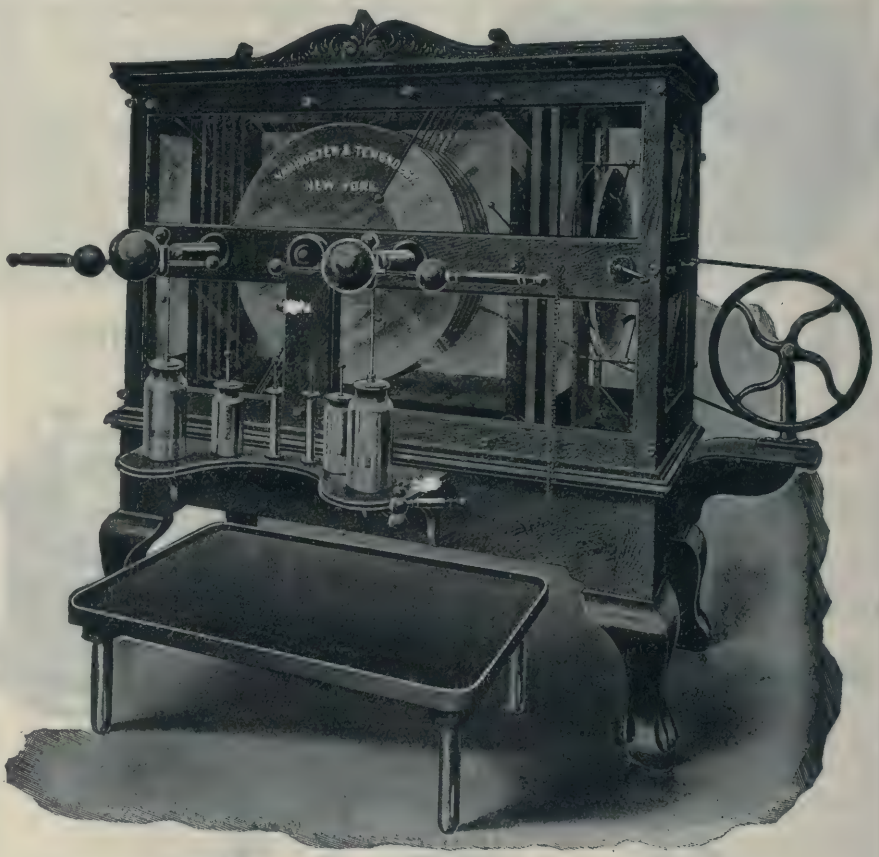

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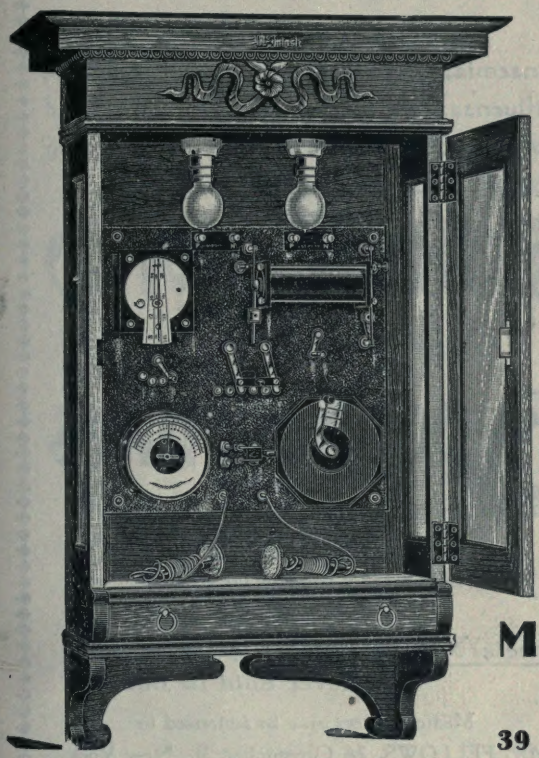

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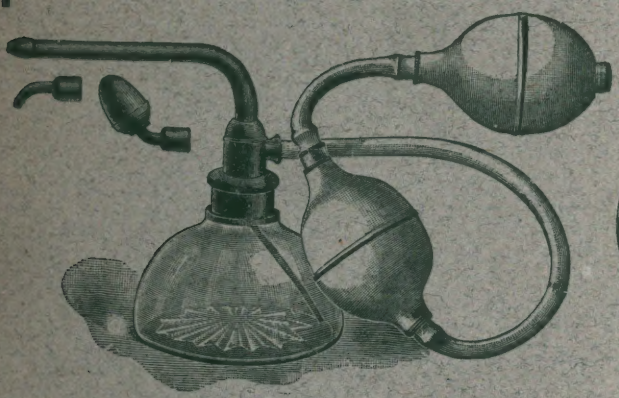

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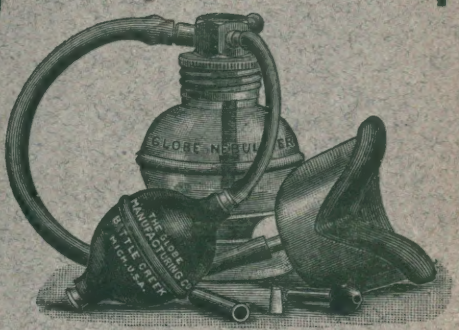

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